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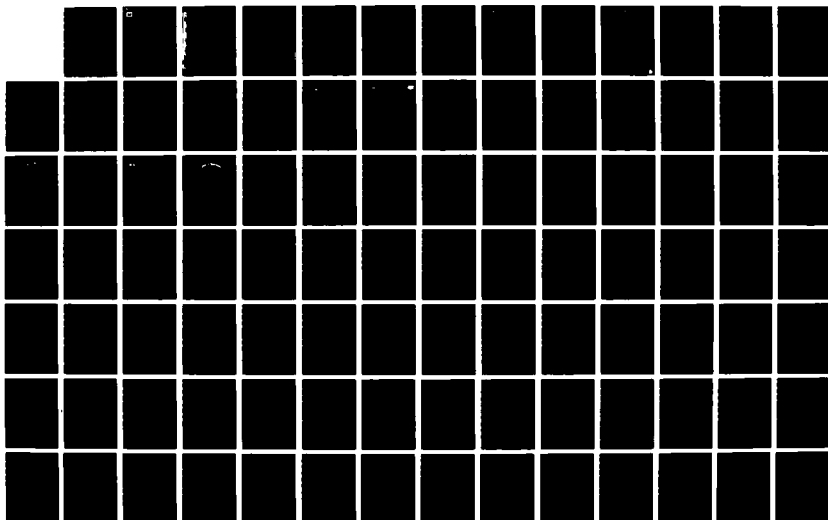
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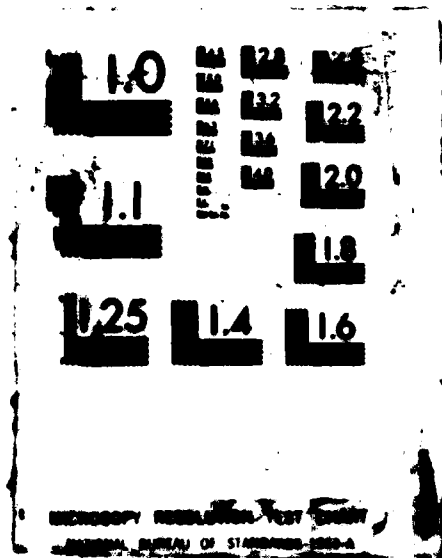
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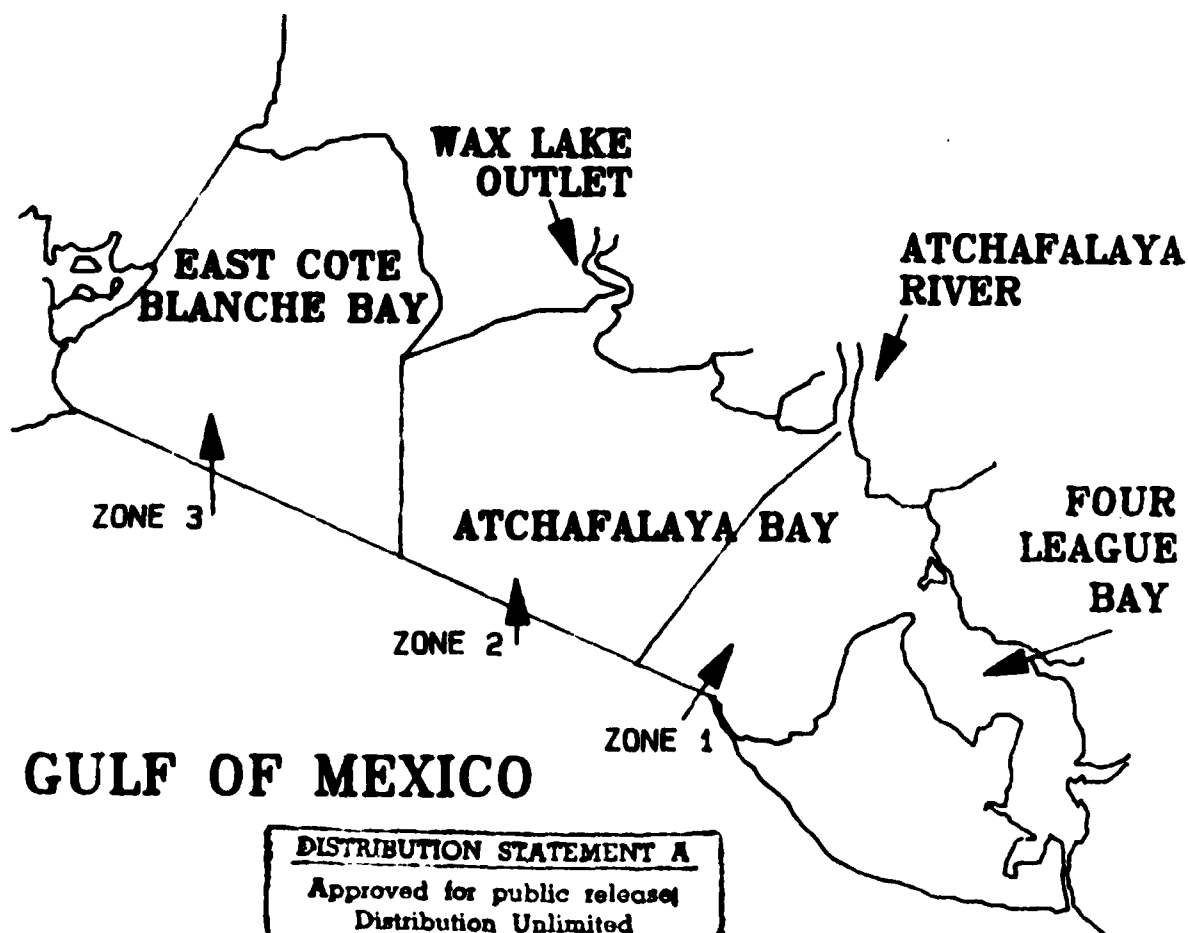
**US Army Corps
of Engineers**
New Orleans District

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AD-A186 761

OYSTER SHELL DREDGING IN ATCHAFALAYA BAY AND ADJACENT WATERS, LOUISIANA



Volume 2

November 1987

Public Comments

Unclassified

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Oyster shells have been removed by means of hydraulic cutter-head dredges from the waters of coastal Louisiana since 1917. The shells have been harvested primarily for use in construction activities, although a variety of other uses are common. There has been considerable controversy over the impacts of shell dredging. This Final Environmental Impact Statement has been prepared to assess the impacts of oyster shell dredging in East Cote Blanche Bay, Atchafalaya Bay, and Four League Bay, Louisiana as (over)		


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cont'd → permitted under 5-year permits issued in 1982 that will expire in December 1987. The document also assesses the impacts of applications for 10-year permit extensions that would allow continuation of dredging under the same conditions. These permit actions are being considered under the authority of the Section 10 of the River and Harbor Act and Section 404 of the Clean Water Act. Numerous alternatives have been discussed and evaluated in the document.

Keywords: 

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VOLUME 2

PUBLIC COMMENTS

This volume contains the comment letters on the Draft Environmental Impact Statement received from Federal and state agencies and other interested parties. The letters are bracketed into specific comments. Responses to each specific comment are provided in Volume 3. The comments and responses are contained in separate volumes so they can be viewed side-by-side for ease of the reviewing public.



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U.S. Department of Housing and Urban Development
Fort Worth Regional Office, Region VI
1800 Throckmorton
Fort Worth, Texas 76113-2905

May 18, 1987

Mr. Cletis R. Wagahoff
Chief, Planning Division
U. S. Army Corps of Engineers
P. O. Box 60267
New Orleans, LA 70160-0267

Dear Mr. Wagahoff:

SUBJECT: Oyster Shell Dredging in Atchafalaya Bay and
Adjacent Waters, Louisiana, Draft Environ-
mental Impact Statement and Appendixes

The subject report has been reviewed by this office
and it has been determined that the Department has no
direct program involvement within the area of action.

A.I.I

The Department has no jurisdiction by law nor does
it have special expertise in the subject matter covered.
In compliance with Section 1503.2 on Environmental Quality
Regulations, we submit a "no comment" response.

Sincerely,

I. J. Ramsbottom
Regional Environmental Officer



DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Centers for Disease Control
Atlanta GA 30333

May 21, 1987

District Engineer
U.S. Army Engineer District
Attention: LMNPD-RE
Post Office Box 60267
New Orleans, Louisiana 70160-0267

Dear Sir:

Thank you for sending us the Draft Environmental Impact Statement (EIS) on Oyster Shell Dredging in Atchafalaya Bay and Adjacent Waters, Louisiana. We are responding on behalf of the U.S. Public Health Service.

A.2.1

We have reviewed this draft EIS for potential adverse human health effects and have no comments to offer at this time.

We appreciate the opportunity to review this EIS. Please send us a copy of the final document when it becomes available.

Sincerely yours,

Vernon M. Houk, M.D.
Assistant Surgeon General
Director
Center for Environmental Health



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Washington, DC 20235

June 2, 1987

Colonel Lloyd Kent Brown
District Engineer, New Orleans District
Department of the Army, Corps of Engineers
P. O. Box 60267
New Orleans, LA 70160

Dear Colonel Brown:

The enclosed comments provide the views of the National Oceanic and Atmospheric Administration on the Draft Environmental Impact Statement for Oyster Shell Dredging in Atchafalaya Bay and Adjacent Waters, Louisiana.

We appreciate the opportunity to review the DEIS.

Sincerely yours,

David Cottingham
Ecology and Conservation Division



Southeast Regional Office
9450 Koger Boulevard
St. Petersburg, FL 33702

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504/389-0508

Colonel Lloyd Kent Brown
District Engineer, New Orleans District
Department of the Army, Corps of Engineers
P. O. Box 60267
New Orleans, LA 70160

Dear Colonel Brown:

The National Marine Fisheries Service (NMFS) has reviewed the Draft Environmental Impact Statement (DEIS) and Appendices for Oyster Shell Dredging in Atchafalaya Bay and Adjacent Waters, Louisiana. We submit the following comments for your consideration:

General Comments

A.3.1

We do not believe that the DEIS sufficiently addresses the impacts of shell dredging in Atchafalaya Bay, Four League Bay, and East Cote Blanche Bay (Zones 1-3). Although the DEIS identifies most major issues, generally it discusses them only briefly, often without scientific data (which may not be available), and concludes that because shell dredging is localized (on a short term basis) and has been conducted in the bays for over 50 years, that the adverse impacts are inconsequential or insignificant. In taking this approach, the New Orleans District has avoided the use of valid analytical procedures required by the National Environmental Policy Act Regulations at 40 CFR Part 1502.22(a)-(c). This part, as revised in 1986 (FR 15618-15626), requires a federal agency to identify incomplete or unavailable information and, if sufficient information can not be obtained, to summarize credible scientific evidence and evaluate impacts based on theoretical approaches or research methods generally accepted by the scientific community.

A.3.2

We take exception to the proposal that the permit be issued for a period of 10 years. Known reserves, in currently permitted areas, would require slightly over five years to harvest at the present rate. The NMFS believes that if a permit is issued, it should not exceed five years. Advances in technology of harvest, alternative materials or need for shell, or scientific data on adverse impacts of dredging necessitating changes in the permit, should be reviewed at no more than five-year intervals.

Specific Comments

S. SUMMARY

S.3. SUMMARY OF ENVIRONMENTAL IMPACTS

S.3.1.2. Shell Reserves of Project Area

- A.3.3 | Page S-3, paragraph 1. The probable depth of the reserves and associated problems of harvest, if any, should be included.

S.3.3. Summary of Biological Impacts

- A.3.4 | Page S-4, paragraph 1. This paragraph inadequately addresses adverse impacts by calculating only the direct impacts of dredging known reserves. The area affected indirectly and the recovery time of all potentially impacted areas should be included.

- A.3.5 | Page S-4, paragraph 2. In the discussion on impacts of dredging, the FEIS should indicate that even in a "naturally turbid system," dredging increases turbidity. The FEIS also should note that holes and troughs tend to collect debris and organic material and may become anoxic during the hot summer months.

S.3.6. Summary of Water Quality Impacts

- A.3.6 | Page S-6, paragraph 1. The sentence discussing turbidity impacts should be expanded to indicate that increased turbidity is detrimental to phytoplankton production, especially if near a tidal pass, and may adversely impact the survival of immigrating marine organisms.

S.3.9. Summary of Economic Impacts

- A.3.7 | Page S-6 and 7. The FEIS should address impacts of holes and troughs on trawling efficiency and hazards to commercial fishing.

S.3.11. Summary of Cumulative Impacts

- A.3.8 | Page S-7 and 8. Rather than just listing other probable impacts, this section should discuss the possible interactive, cumulative, and/or synergistic effects of the various factors.

S.4. SUMMARY OF MITIGATION MEASURES

- A.3.9 | Page S-8, paragraph 4. This section should be expanded to discuss any monitoring studies, colonization by oyster spat or increased recreational fishing intensity on the reef constructed as mitigation. Construction of similar reefs should be required for every 200,000 cubic yards of dredged material as a mitigation condition to any permit issued. Sites for potential reefs should be recommended by the Louisiana Department of Wildlife and Fisheries (LDWF). The existing reef was constructed in 1978

A.3.9

prior to issuance of the last time extension (1982). It was built to mitigate the destruction, by shell dredging, of remnants of exposed reefs near Marsh Island. The mitigation was agreed to by the NMFS, Corps of Engineers, LDWF, and the shell dredging industry.

S.5. Summary of Judicial Requirements
d. Sport Fishing

A.3.10

Page S-9, paragraph 5. The referenced discussion is in Section 3.7.6 rather than 3.7.2 as stated.

f. Exhaustion of Shell Resource

A.3.11

Page S-10. Economically retrievable should be defined in terms of depth and density of shell.

1. PURPOSE AND NEED FOR PROPOSED ACTION
1.3. DESCRIPTION OF SHELL DREDGING TECHNIQUES

A.3.12

Page EIS-3 and 4. "Fluid mud" should be mentioned in this section in the FEIS in connection with the discharge.

2. ALTERNATIVES
2.2. DESCRIPTION OF ALTERNATIVES
2.2.1. Permit Denial (No Action)
2.2.1.1. Alternative Materials

A.3.13

Page EIS-6. Uses for shell which are density dependent should be specified along with the percent contribution of shell to each commercial use. A more in-depth discussion on the topic of alternative materials should be provided in the FEIS.

2.2.2. Renew Permits with Existing Conditions

A.3.14

Page EIS-8, paragraph 2. The word actively should be deleted from the sentence in parentheses.

2.2.3. Renew Permits with Additional Restrictions

A.3.15

Page EIS-8, paragraph 3. Neither this section nor Appendix B contains any restriction regarding the depth to which shell dredging is allowed or the depth of holes remaining after shell dredging is completed. The FEIS should address the environmental benefits of an additional restriction limiting the depths of holes and troughs immediately after the dredge passes.

2.2.3.1. Additional Restrictions on Areas Available for Dredging

A.3.16

Page EIS-9, paragraph 1. Figure 8 does not indicate the proposed area to be closed, nor do any of the figures have Mosquito Point or Big Carencro Bayou labeled. Accordingly, Figure 8 should be revised.

A.3.17

Page EIS-9, paragraph 3. The DEIS concludes that current restrictions around the region of the developing deltas is an adequate buffer to prevent impacts from shell dredging. The FEIS should give additional consideration to expansion of the protective zones based on bathymetric surveys, the recent photographs showing growth of the deltas, and the projections for future growth developed by the Corps of Engineers.

2.2.3.3. Additional Restrictions on Dredge Discharge

A.3.18

Page EIS-11, paragraph 1. Since silt screens are effective in minimizing turbidity, the FEIS should discuss methods to improve screen efficiency when installed around the slow moving barge.

2.4. MITIGATION MEASURES

A.3.19

Page EIS-14, paragraphs 2 and 3. The FEIS should discuss the success or failure of the artificial reef for "improving the marine environment." Colonization by live oysters and utilization of the reef area by marine fishes should be addressed. If no studies or monitoring have been conducted, that also should be stated.

3. EXISTING CONDITIONS AND IMPACTS OF ALTERNATIVES

3.4. PHYSICAL ENVIRONMENT

3.4.1. Geological Resources

3.4.1.2. Physical Resources

3.4.1.2.2. Impacts of Alternatives

Alternative 1 - Renew Permits with Existing Conditions

A.3.20

Page EIS-24 and 25. The discussion of the Atchafalaya Bay delta should be revised based on current data to describe the bounds of the -2 ft. NGVD contour of this prograding delta.

Alternative 2 - Permit Denial (No Action)

A.3.21

Page EIS 25, paragraph 3. The previous subheading indicated that the amount of material necessary to replace that lost to shell dredging is about 6 percent of the annual silt and clay load of the floodway system. This section should be revised to reflect the positive effect of permit denial on delta growth. See also EIS-29, paragraph 1.

3.4.1.4. Refuges and Wildlife Management Areas

3.4.1.4.1. Existing Conditions

A.3.22

Page EIS-30, paragraph 1. This paragraph should be expanded to note that commercial and recreational fishing is allowed in the Atchafalaya Delta Wildlife Management Area (WMA). Commercial species caught include shrimp, blue crab, red drum, sea trout, gar and catfish. Oysters are harvested in the WMA which also is included in waters designated by the state as oyster seed grounds.

3.4.2. Hydrological Resources and Water Quality

3.4.2.2. Water and Sediment Quality

3.4.2.2.1. Existing Conditions

A.3.23

Page EIS-31 through 35. The core samples discussed in this section were taken in 1976. More recent samples should be analyzed to determine if the levels reported are still "existing."

3.4.2.3. Sediment - Physical Characteristics

3.4.2.3.2. Impacts of Alternatives

Alternative 1 - Renew Permits with Existing Conditions

A.3.24

Page EIS-37, paragraph 1. This paragraph should be expanded to give a range of time required for the dredged holes to fill to surrounding bottom elevations. Also, a range in area of lateral flow of fluid mud should be discussed.

A.3.25

Page EIS-38, paragraph 1. The last sentence should be revised to indicate that turbidity associated with nearly continual dredging might have chronic effects on water quality.

3.5. BIOLOGICAL ENVIRONMENT

3.5.1. Botanical Resources

3.5.1.2. Phytoplankton

3.5.1.2.2. Impacts of Alternatives

Alternative 1 - Renew Permits with Existing Conditions

A.3.26

Page EIS-41, paragraph 2. This section should be expanded to indicate that increased turbidity in an area of high turbidities and high primary productivity would reduce phytoplankton production either by limited light causing reduced reproduction, or by sediment particles causing phytoplankters to settle to the bottom. Pursuant to 40 CFR Part 1502.22, long term turbidity impacts still require assessment using "theoretical approaches or research methods generally accepted in the scientific community."

3.5.2. Zoological Resources

3.5.2.1. Fisheries

3.5.2.2.1. Existing Conditions Correct number to 3.5.2.1.1.

3.5.2.2.2. Impacts of Alternatives Correct number to 3.5.2.1.2.

Alternative 1 - Renew Permits with Existing Conditions

A.3.27

Page EIS-44, paragraph 2. This section should be expanded to discuss the effects of turbidity on larval and postlarval stages of marine organisms, which because of their small size would be unable to avoid extremely turbid areas or cutterhead entrainment. Again the DEIS concludes that there would be no significant effect of turbidity on fishery resources, but does not discuss the potential impacts of a shell dredge operating near a tidal pass during peak migration of larval organisms. See our comment above referring to 40 CFR Part 1502.22.

A.3.28 | Page EIS-45, paragraph 1. This paragraph should be expanded to discuss impacts to fish during the entire year, not just during cold fronts, with respect to anoxia and degraded benthic environments (See pages EIS-46 and D-23).

3.5.2.2. Benthos

3.5.2.2.2. Impacts of Alternatives

Alternative 1 - Renew Permits with Existing Conditions

A.3.29 | Page EIS-47, paragraph 1. A range of area impacted by turbidity plumes and fluid muds should be discussed. See our comment referring to 40 CFR Part 1402.22.

A.3.30 | Page EIS-47, paragraph 1. The range of benthic recovery times should be discussed for different bottom types and under various conditions. The last sentence should be expanded to include recovery to pre-dredged status under worst-case conditions.

3.5.2.3. Oyster Reefs

3.5.2.3.1. Existing Conditions

A.3.31 | Page EIS-49, paragraph 1. This paragraph should be expanded to include the value of exposed oyster reefs to other fishery resources.

3.5.2.3.1. Impacts of Alternatives (Correct number to

3.5.2.3.2.)

Alternative 1 - Renewal of Permits with Existing Conditions

A.3.32 | Page EIS-52, paragraph 1. The range of adverse impacts (worst-case effect) should be discussed for turbidity and fluid mud as well as the processes which reduce their impacts.

A.3.33 | Page EIS-53, paragraph 1. The DEIS states that existing restrictions are effective in protecting exposed oyster reefs from destruction by shell dredging, however the locations of most are uncharted. Such reefs, located outside the 1500-ft. distance from natural land masses and other protected zones should be located, mapped and monitored during dredging to reduce their vulnerability to being dredged. The FEIS should include such maps and satisfy an appropriate monitoring program.

3.6. ECONOMIC ENVIRONMENT

3.6.1. BUSINESS AND INDUSTRIAL ACTIVITY

3.6.1.1. Existing Conditions

A.3.34 | Page EIS-57, paragraph 1 and Table 6. Data on shell production and the discussion should be updated to the present. Also, see our comments on page EIS-6.

3.7. SOCIAL ENVIRONMENT

3.7.6. RECREATION

3.7.6.1. Existing Condition

A.3.35 | Page EIS-83. The section should be expanded to include the value of sport fishing in bay waters only, either by man-days, or other economic valuation.

3.7.6.2. Impacts of Alternatives

Alternative 1 - Renew Permits with Existing Conditions

A.3.36 | Page EIS-84, paragraph 2. Rather than intimating that shell dredging is beneficial to recreational fishermen, the FEIS should be consistent with previous sections and calculate the percent area of the bays involved. The discussion also should indicate whether fish and shrimp concentrations near dredges have been documented and statistically validated. The last sentence should be expanded to include data on the economic impact of gear loss by recreational and commercial fishermen.

3.8. CUMULATIVE IMPACTS

3.8.3. Impacts of Shrimping

A.3.37 | Page EIS-87, paragraph 1. The first sentence states that few studies have been conducted regarding the impacts of trawls on bottom fauna, yet the third sentence concludes that trawling greatly disturbs the bottom and associated benthos. The third sentence should be revised to indicate that the conclusion is speculative.

A.3.38 | Page EIS-87 and 88, last paragraph. In the discussion of suspended sediment in Corpus Christi Bay, Texas, the type of dredge (shell, bucket, or hydraulic) should be specified. Sediment types should be compared with those of the area discussed in the DEIS and whether or not the dredged material was placed in the water, in a diked area, or on land should be indicated. This section also should compare duration of impacts and creation of fluid mud waves.

3.8.4. Impacts of Other Permitted Activities

A.3.39 | Page EIS-90, paragraph 4. It is well documented that marina construction frequently results in long term wetland and water quality impacts. This paragraph should be revised appropriately.

3.8.5. Impacts of Corps of Engineers Civil Works Projects Maintenance of Navigable Waterways

A.3.40 | Page EIS-93, paragraph 4. The NMFS should be included as a coordinating agency.

SUMMARY

A.3.41 | Page EIS-95, paragraph 1. See our comments on pages S-7 and 8.

Sincerely yours,

Richard J. Hoogland

Richard J. Hoogland
Assistant Regional Director
Habitat Conservation Division



Federal Emergency Management Agency

Region VI, Federal Center, 800 North Loop 288
Denton, Texas 76201-3698

NTH

June 8, 1987

Mr. Cletis R. Wagahoff
Chief - Planning Division
Corps of Engineers
New Orleans District
P. O. box 60267
New Orleans, LA 70160-0267


Dear Mr. Wagahoff:

A.4.1 This letter is in response to the recent solicitation of comments regarding the Draft Environmental Impact Statement for Oyster Shell Dredging in Atchafalya Bay and Adjacent Waters, Louisiana. Even though flooding was not addressed as being positively or negatively impacted by the Shell dredging activity, the text of the draft report appears to imply that there would be no flooding effects to the flooding sources or the surrounding floodplains. Therefore, it does not appear that the National Flood Insurance Program (NFIP) regulations or requirements would be affected.

However, all of the surrounding parishes and municipalities do participate in the NFIP and if you have not already done so, they should be contacted and given the opportunity for review and comment concerning their implementation of the NFIP as well as other local regulations.

If we can provide any further assistance regarding this or any other floodplain management matter, please contact this office.

Sincerely,


Wayne Fairley
Natural Hazards Program
Specialist
Natural & Technological
Hazards Division



United States Department of the Interior

OFFICE OF ENVIRONMENTAL PROJECT REVIEW
POST OFFICE BOX 2088
ALBUQUERQUE, NEW MEXICO 87103

June 9, 1987

ER-87/553

Colonel Lloyd K. Brown
District Engineer
U.S. Army Corps of Engineers
Post Office Box 60267
New Orleans, Louisiana 70160-0267

Dear Colonel Brown:

We have reviewed the Draft Environmental Impact Statement (EIS) and Appendixes for Oyster Shell Dredging in Atchafalaya Bay, St. Mary Parish, Louisiana, and have the following comments.

General Comments

While the EIS contains an abundance of information, many of the conclusions contained in the document are not adequately substantiated. The Fish and Wildlife Service provided input at the June 1986 EIS scoping workshop which addressed potential shell dredging impacts on delta development, shell reefs, and fishing and the need for supporting data in all of these areas. We find that the EIS is still in need of considerable revision.

- A.5.1 | The EIS should include estimates of total shell reserves in the project area. This would be very helpful in developing and evaluating alternatives, assessing impacts, and predicting future environmental conditions as influenced by shell dredging.

Specific Comments

- A.5.2 | Page S-4, Section S.3.3. - The EIS should clearly indicate that the biological impacts of dredging are more likely to be continuous rather than temporary, as the dredges operate continuously. Furthermore, it should be acknowledged that dissolved oxygen levels in deeper dredged holes, could become too low to support aquatic life during warmer months. The phenomenon of depressed oxygen levels in dredged holes in the project area is discussed in Appendix D.
- A.5.3 | The EIS should indicate that some exposed shell reefs are located outside zones where dredging is specifically prohibited, and that those reefs are vulnerable to destruction by shell dredging. The biological impacts of this type of activity should be addressed.
- A.5.4 | Page S-5, Paragraph S.3.5. - This section should address impacts to delta development resulting from shell dredging operations, especially from shell removal and creation/maintenance of access channels. The dredged holes and channels in and near the delta have already altered natural circulation and sedimentation patterns.

A.5.5

Page S-6, Paragraph S.3.8. - We disagree with the statement that minimal recreational use occurs in project-area waters. Shell-covered bottoms on the remaining reefs of Point Au Fer reef complex and along the eastern side of Marsh Island are heavily utilized by fishermen. A creel survey conducted by the Louisiana Department of Wildlife and Fisheries (LDWF) in nearby Vermilion Bay revealed that recreational shrimpers harvested nearly as much shrimp as did commercial shrimpers. Portions of Atchafalaya and East Cote Blanche Bays are extensively used by recreational shrimpers. Also, the EIS should discuss the potential hazards of trawling across trenches (left by shell dredges) by recreational shrimpers who are likely not to trawl frequently enough to stay informed on the location of those trenches.

A.5.6

Page S-8, Paragraph S.4. - It should be noted that no off-site mitigation has been performed in the project area as a result of the Coastal Use Permit conditions. The reef described was built 4 years prior to Coastal Use Permit issuance to mitigate the impacts of dredging the remnants of exposed reefs.

A.5.7

Page EIS-9, Paragraph 3 - The alternative of expanding the protective zone around the developing deltas should be given additional consideration. Substantial deltaic expansion has occurred since protective zones were established on the basis of 1977 and 1981 bathymetric data. More recent information indicates a need to enlarge the protective zones. The FWS input into the EIS scoping process included a recommendation to evaluate the impacts of alternative restrictive boundaries adjacent to the emerging Atchafalaya delta. The present restrictive boundary was negotiated by the FWS and the shell dredging industry; the LDWF utilized another boundary in the shell lease that it issued, and previous permits used still another boundary. We recommend that this EIS include more current information portraying delta development, provide information on configurations of future deltaic conditions projected by the Corps of Engineers, and incorporate the FWS input to the scoping process regarding the issue of impacts on the Atchafalaya delta.

A.5.8

Page EIS-12, Paragraph 2.2.4.1. - In an effort to further minimize the effects of shell dredging on shoreline erosion, the EIS should consider relaxing the 0.5-mile-wide restrictive zone in the upper lobe of Four League Bay only in the areas where proven shell reserves exist, rather than along the entire shoreline in that area.

A.5.9

Pages EIS-16 through EIS 19 - This Table should be revised to consider commercial fisheries harvest under the Fisheries Resource/Issues heading. For Alternative 1, the EIS indicates that impacts to fisheries would be transient and minimal; similar conclusions were reached for the other action alternatives. The EIS should acknowledge that crab, shrimp, catfish, red drum, gar, and seatrout fisheries occur in the project area, and should assess the impact of shell dredging on each fishery. For example, crab traps could be lost in dredged pits and trawling gear could be lost or damaged if pulled across such pits. It should also be noted that undesirable low dissolved oxygen levels could occur in dredged pits (as stated in Appendix D) and that such conditions could be lethal to living organisms.

A.5.10

In the Oyster Reefs Resource/Issues heading, it should be noted that Atchafalaya Bay and East Cote Blanche Bay have been designated as a seed oyster ground by the LDWF. Preliminary estimates indicates that 200,000 sacks of marketable oysters and 100,000 sacks of seed oysters were harvested in the general area during 1986. According to university researchers knowledgeable of deltaic processes, buried reefs provide a much better delta building foundation than that which would result from dredged holes. Therefore, we disagree with the statement in the EIS that buried reefs have no such value.

A.5.11 Under the Recreation Resource/Issues heading, it should be noted that shell dredging, under existing conditions, has little or no impact on recreation interests. This section should indicate that the area is used extensively for recreational shrimping.

A.5.12 Page EIS-30, Paragraph 1 - This paragraph should be expanded to indicate that rabbit hunting, recreational fishing, and commercial fishing are also allowed on Atchafalaya Delta Wildlife Management Area. This paragraph should also note that the shallow waters, tidal flats, and marshes of that area provide important nursery and feeding areas for many species of estuarine organisms; that the vegetated delta islands provide important nesting habitat for more than 20,000 wading birds; and that the wildlife management area has become a regionally popular waterfowl hunting area.

A.5.13 Page EIS-30, Paragraph 2 - The statement that hunting and fishing are prohibited on Marsh Island Wildlife Refuge should be revised to indicate that recreational fishing and furbearer and alligator harvests are allowed while sport hunting and commercial fishing are not permitted.

A.5.14 Page EIS-30, Paragraph 3.4.1.4.2 - This section should include the necessary information to substantiate the statement that coastal erosion is not a problem on Marsh Island, according to a letter dated December 20, 1982, from James P. Morgan, geologist, to Louisiana Department of Natural Resources, the eastern and western ends of Marsh Island have been eroding at an average rate of 15 feet per year. The EIS indicates that impacts to delta development will be minimal. We believe that the areas where dredging in Atchafalaya Bay is prohibited must be adjusted as the delta expands if shell dredging impacts on that delta are to be minimized.

A.5.15 Page EIS-31, Alternative 2 - The statement that impacts would cease if the permits were denied should be revised to state that no additional impacts would occur. This revision is appropriate as the removal of most of the Point au Fer reef complex and the dredging of subaerial portions of the delta and deltaic distributary channels have resulted in long-term and, in some cases, irreversible adverse impacts to Marsh Island and the Atchafalaya delta.

A.5.16 Page EIS-44, Paragraph 3.5.2.2.1. - This paragraph should be revised to indicate that there is a significant commercial harvest of fish and shellfish in the project area. Since reported landings may not accurately reflect actual harvests, spokesmen from the fishing industry and LDWF personnel familiar with commercial fishing in the project area should be interviewed in an attempt to accurately describe the fisheries and to obtain information concerning the impacts of dredging. The EIS should identify popular fishing areas by type of fishery, characterize the conditions which make such areas attractive for those uses, and indicate whether shell dredging in those areas is now prohibited. The EIS should also address measures to reduce conflicts between shell dredging and the various fishery uses.

A.5.17 Page EIS-44, Paragraph 3.5.2.2.2. - This section indicates that shell dredging impacts to fisheries are transient and minimal and that there is no indication that the fishery resources of the project area have been or will be damaged or adversely affected in any way by the operations of the shell dredges. The FWS believes that such statements are not well-founded. The dredging of the Point au Fer reef complex has irreversibly destroyed valuable habitat for many species of fish. The removal of large portions of that reef complex has likely resulted in aggravated shoreline erosion in the project area and in retarded delta development; the delta and adjacent mainland contain wetland habitats very important to fishery resources. The dredging of buried reefs in subaerial portions of the Atchafalaya delta has had long-term impacts on the development of that

- A.5.17 delta and the habitat that it provides for numerous fish and shellfish species. The EIS should: acknowledge that a significant fishery exists in the project area; discuss the habitat requirements of the fish and shellfish species involved and the methods used in their harvest; identify the locations of primary harvest areas and compare those locations to the areas permitted for shell dredging; and more fully assess actual or potential conflicts between shell dredging and fisheries. Conclusions regarding impacts on fishery resources should not be made until such an assessment is completed.
- A.5.18 Statements in other sections of the EIS contradict the conclusions reached in this section (i.e., that impacts on fisheries are minimal); those statements acknowledge that trawling in dredged trenches may result in the loss of gear, that shrimp trawlers would avoid dredged areas, and that while exposed reefs are protected, no detailed maps of such reefs exist.
- A.5.19 Page EIS-45, Alternative 2 - Reference previous comments regarding the water quality problems exhibited by deeper dredged holes.
- A.5.20 Pages EIS-48 through EIS-50, Section 3.5.2.3.1. - This section should be expanded to include a discussion of the value of exposed reefs to other fishery resources, especially those important to commercial or recreational fishing.
- A.5.21 Page EIS-53, Paragraph 1 - It is stated that, under existing permit conditions, exposed reefs are protected from the effects of shell dredging. We believe that most of the exposed shell reefs in the project area are adequately protected because they are located within specifically defined restricted zones. However, the EIS should acknowledge that some reefs are located outside the restricted zones and are thus vulnerable to shell dredging. Available data and/or additional surveys should be utilized to indicate the locations of any exposed reefs located outside of the areas where shell dredging is prohibited.
- A.5.22 Page EIS-54, Alternative 4 - The EIS concludes that the alternative of reducing shoreline restrictions in upper Four League Bay would have no impact on oyster reefs. Such a conclusion is not well-founded; the location of the oyster reefs in question were not shown in the EIS, there are apparently no plans to locate those reefs, and, as a result, those reefs could be dredged unintentionally. The EIS should acknowledge the vulnerability of exposed reefs located outside areas where dredging is specifically prohibited.
- A.5.23 Page EIS-80, Paragraph 1 - The EIS should address the public concerns over shell dredging in more detail. Concern over impacts to delta building and shoreline erosion has been expressed by local governments, geologists, private conservation groups, and others. Furthermore, recreational and commercial fishing interests have expressed concern over the effects of dredging on fishing and shrimping.
- A.5.24 Page EIS-83, Section 3.7.6.1. - The preliminary results of the Corps of Engineers' Recreational Use Study of the Louisiana coastal area should be considered in the EIS. Those results would likely provide useful information regarding recreational uses in the project area. The EIS should also note the Atchafalaya Delta has become a regionally popular waterfowl hunting area.
- A.5.25 The discussion on recreational fishing and shrimping should acknowledge that substantial numbers of fishermen and shrimpers from other parishes in the region also utilize the project area. Several regionally popular saltwater fishing tournaments, lasting from one weekend to three months, are held in St. Mary Parish during the summer and fall.

A.5.26 | Page EIS-84, Alternative 3 - The statement that closure of the bottom half of Four League Bay to shell dredging would provide exclusive use of the area by recreationists is inaccurate. This portion of Four League Bay contains commercial oyster leases and oil and gas production facilities. Additionally, commercial crabbing and shrimping are conducted there.

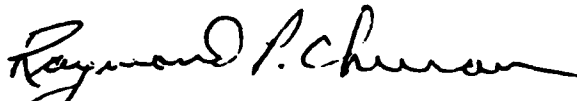
A.5.27 | Page EIS-85, Alternative 4 - The EIS should acknowledge that, with adoption of this alternative, recreational shrimpers would lose the predictability regarding bottom conditions within the relaxed restricted zone and, as noted elsewhere in this EIS, would risk losing their gear in unfilled dredged holes.

Summary Comments

A.5.28 | While an abundance of existing information was utilized in the preparation of this document, several major data gaps remain which detract from the adequacy of the draft EIS. Insufficient information is presented on the location and volume of shell reserves. The lack of such information impedes the analysis of the impacts of various alternatives. This information gap also prevents the development of a sound management plan that would minimize conflicts among various user groups. Also, insufficient information is presented on recreational and commercial fisheries, areas important to those fisheries, and conflicts with shell dredging. Insufficient information is presented on the configuration and projected rate of the expansion of the Atchafalaya delta, and on alternative measures to protect the delta from shell dredging impacts. We encourage the Corps of Engineers to make the recommended changes so that the final EIS can serve as a more reliable basis for decision-making.

Thank you for the opportunity to comment on this statement.

Sincerely,



Raymond P. Churan
Regional Environmental Officer



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VI

ALLIED BANK TOWER AT FOUNTAIN PLACE

1445 ROSS AVENUE

DALLAS, TEXAS 75202

JUN 24 1987

REPLY TO: 6E-FT

Colonel Lloyd K. Brown
District Engineer
ATTN: LMNPD-RE
Corps of Engineers, New Orleans District
P.O. Box 60267
New Orleans, Louisiana 70160-0267

Dear Colonel Brown:

In accordance with responsibilities under Section 309 of the Clean Air Act and the National Environmental Policy Act (NEPA), the Region VI office of the Environmental Protection Agency (EPA) has reviewed your Draft Environmental Impact Statement (EIS) on the proposed Oyster Shell Dredging in Atchafalaya Bay and Adjacent Waters, Louisiana.

Our suggestions as enclosed are offered to strengthen deficiencies found within the EIS. More information appears to be necessary to comply with NEPA and the Clean Water Act, Section 404(b)(1) guidelines.

A.6.1

We classify your draft EIS as EC-2 (Insufficient Information). Our classification will be published in the Federal Register according to our responsibility to inform the public of our views on the proposed Federal actions, under Section 309 of the Clean Air Act.

We appreciate the opportunity to review the draft EIS. Please send our office one copy of the Final EIS at the same time it is sent to the Office of Federal Activities, U.S. Environmental Protection Agency, 401 M Street, SW, Washington, D.C. 20460.

Sincerely yours,

Allyn M. Davis

for Robert E. Layton Jr., P.E.
Regional Administrator

Enclosures

SPECIFIC COMMENTS ON THE
OYSTER SHELL DREDGING IN ATCHAFALAYA BAY AND ADJACENT WATERS
DRAFT ENVIRONMENTAL IMPACT STATEMENT

Clean Water Act (CWA), Section 404(b)(1) Guidelines

- A.6.2 | A discussion of the 404(b)(1) guidelines as they relate to the reissuance of the proposed dredge and fill permit should be included in the document.

Factual determinations

- A.6.3 | The 404(b)(1) guidelines [Section 230.11(d) of Subpart B] require that contaminant determinations be made including the degree to which dredged material will introduce, relocate, or increase pollutants. This determination shall consider the material to be discharged, the aquatic environment at the proposed disposal site and the availability of pollutants.

- A.6.4 | The determinations of available sediment contaminants was made according to sediment core data sampled in 1976. These analytical results are approximately 11 years old. New core samples should be made to verify the 1976 sample results and the accuracy of the elutriate testing. The resulting analysis would also confirm or deny the conclusions made on subsequent effects on the aquatic ecosystem. General evaluation and testing procedures are outlined in the 404(b)(1) guidelines [Section 230.60 of Subpart G].

The 1976 sediment sampling data did not include East Cote Blanche Bay and Four League Bay. The sediment in these areas should be sampled.

Analysis of Alternatives

- A.6.5 | According to Section 1502.14(b) of the Council on Environmental Quality (CEQ), National Environmental Policy Act (NEPA) regulations substantial treatment of each alternative must be considered in detail. Sand, recycled concrete, gravel and limestone appeared to have similar material qualities as oyster shell. Considerations of availability, costs, economics, transportation, handling and durability were eliminated from the material source feasibility analysis for these materials. Please provide an additional explanation for this rationale.

- A.6.6 | In order to provide an accurate reflection of the impacts and analysis of alternatives, a quantification (in surface acres and cubic yards) of existing dead and live oyster reefs is needed. Determination of the quantities of shell will allow resource managers additional information to assist them in estimating available quantities for future dredging, estimating demands on this resource and monitoring the impacts of the proposed 10 years of shell dredging.

- A.6.7 | The preferred alternative was not identified in the analysis of alternatives section.

Time extension period

- A.6.8 | According to the DEIS, Section S.3.1.2., Shell Reserves of Project Area, if shell dredging activities in all areas are conducted at the existing permit extraction rates, shell resources are available for a maximum of 2.1 years. Please describe and discuss the need for a 10 year permit extension in the final EIS.

Mitigation

- A.6.9 | Section 1502.14 of the CEQ NEPA Regulations requires appropriate mitigation measures. In order to evaluate appropriate measures, past mitigation efforts to mitigate the effects of oyster shell dredging should be described. This should include a discussion of the number of sites, the location of the sites and the success rates of artificial reef construction. If past mitigation is successful, "restoration reefs" should continue to be created and monitored. If they have been unsuccessful, alternative mitigation should be coordinated with appropriate Federal and State agencies. Proposed mitigation should be incorporated as a condition in the dredge and fill permit.

Management Plans

- A.6.10 | Resource management plans should be developed with local, State and Federal agencies and associated dredging industries and businesses. These plans could successfully monitor shell dredging activities, and coordinate conflicting use requirements with shrimping, crabbing and recreational fishing industries.

Violations

- A.6.11 | Any past permit violations and subsequent enforcement activity should be discussed within the document.



J. BURTON ANGELLE, SR.
SECRETARY
(504) 925-3617

DEPARTMENT OF WILDLIFE AND FISHERIES
POST OFFICE BOX 15570
BATON ROUGE, LA 70895

EDWIN W. EDWARDS
GOVERNOR

May 29, 1987

District Engineer
U.S. Army Engineer District
P.O. Box 60267
New Orleans, LA 70160-0267

Attn: LMNPD-RE

Re: DEIS Oyster Shell Dredging in Atchafalaya Bay and
Adjacent Waters, Louisiana

Dear Colonel:

Personnel of the Louisiana Department of Wildlife and Fisheries have reviewed the Draft Environmental Impact Statement on Oyster Shell Dredging in Atchafalaya Bay and Adjacent Waters and we find that we generally concur with the findings and conclusions presented.

B.1.1 The Department has been involved with leasing water bottoms for shell dredging and managing and regulating shell dredging for over 70 years. We feel that these activities have been conducted without any significant adverse effect on the environment or overall fisheries production. Catch and landings figures for all forms of seafood over the years in Louisiana have continued to lead the nation. The draft environmental impact statement clearly states that minor impacts may occur within the benthic communities, however, the dynamics and fecundity of these communities are such that impacts are short-termed and recovery is rapid. Most other scientists agree with this, and with proper management and certain restrictions and regulations optimum seafood production should continue without changing shell dredging practices as they are currently operated.

B.1.2 Finally, with regard to the alternatives as listed since the DEIS states no significant environmental impacts resulting from shell dredging as currently practiced, then there is no compelling need to implement Alternative 2. Again, with current regulations in effect, shell dredging cannot occur in areas where there are live oysters, therefore, Alternative 3 should not be necessary. If, however, the decision is made to implement Alternative 3, then the boundary line between Upper and Lower Four League Bay should be the Transcontinental Pipeline since it's easily located and more definite and provides a point-to-point location. Additionally, no long term persistent damages have ever been documented resulting from shell dredging prior to implementation of the one-half mile restrictions as imposed by

B.1.2

CZM in 1982. Alternative 4, which moves the one-half mile restriction to 1500 feet, may therefore warrant closer observation.

Thank you for affording us the opportunity to comment on the DEIS.

Sincerely,


J. Burton Angelle
Secretary

JBA/PJ/bw



State of Louisiana ♦ Department of Culture, Recreation and Tourism

Edwin W. Edwards
Governor

Noelle LeBlanc
Secretary

Robert B. DeBlieux
Assistant Secretary

♦ Office of Cultural Development

June 1, 1987

District Engineer
U.S. Army Engineer District
P.O. Box 60267
New Orleans, Louisiana 70160-0267
ATTN: LMNPD-RE

Re: Draft Environmental Impact Statement
Clam Shell Dredging in Atchafalaya
Bay and Adjacent Waters, Louisiana

Dear Sir:

Reference is made to your letter dated April 10, 1987, transmitting the above document for our review and comment. We have completed our review and have the following comments to offer.

B.2.1

In the summary of cultural impacts on page S-6, the standard provision for dealing with cultural resources encountered during dredging operations is included. We recommend that a second paragraph be inserted as was done in the Lakes Pontchartrain and Maurepas EIS discussing the Underwater Cultural Resources Management Plan currently being developed by the New Orleans District to address the impacts of activities such as clam dredging on submerged cultural resources in State waters. We feel that such a plan will be an important step towards identifying and assessing these resources and we look forward to working with the New Orleans District in developing and implementing this type of management plan.

Should you have any questions concerning our comments, do not hesitate to contact my staff in the Division of Archaeology.

Sincerely,

Robert B. DeBlieux
State Historic Preservation Officer

RBD:PGR:s

♦ Division of Archaeology
Kathleen M. Byrd, Ph.D., Director
606 N. Foster Dr.
P. O. Box 44247
Baton Rouge, LA 70804
(504) 922-0368



J. BURTON ANGELLE, SR.
SECRETARY

DEPARTMENT OF WILDLIFE AND FISHERIES
OFFICE OF WILDLIFE
FUR AND REFUGE
P.O. BOX 15570
BATON ROUGE, LOUISIANA 70895
504/342-5874

EO 11651, 11652, 11653
10/1/79

June 2, 1987

Mr. John Weber, Chief
Environmental Analysis Branch
Planning Division
New Orleans District - Corps of Engineers
P.O. Box 60267
New Orleans, Louisiana 70160

RE: LMNOD-SP

Dear Mr. Weber:

I have reviewed the Shell Dredging Draft Environmental Impact Statements prepared by the New Orleans District for Lakes Maurepas and Pontchartrain and Central Coast Area, LDWF Zones 1 through 3.

It appears to me that these documents generally corroborate what Wildlife Conservation Managers have been saying for the past twenty-five years; "Shell dredging has no real effect on the environment or the overall fisheries."

- Re: 1) St. Amant, Lyle S. - Louisiana Wildlife and Fisheries Commission, 1972.
- 2) May, Edwin B. - Alabama Department of Conservation and Natural Resources, Marine Resources Division, Bull. No. 9, 1973.
- 3) Joyce, E. A. - Bureau of Marine Science and Technology, Florida Department of Natural Resources, Special Report, 1975.

My specific comments are as follows:

Atchafalaya Bay

Page EIS-9, paragraph 1 - Boundary line between Upper and Lower Four League Bay. From a wildlife management standpoint I suggest that the Transcontinental pipe line be used as the boundary. This facility is easily located and provides a definite, point to point location.

D.3.1

Mr. John Weber
June 2, 1987
Page 2

Atchafalaya Bay (cont.)

- B.3.2 | Page EIS-14 Cypremort Point Reef, should be northwest of Cypremort Point in Vermilion Bay.
- B.3.3 | Page EIS-20, C-17 Water depth in East Cote Blanche Bay averages about 8 feet.
- B.3.4 | It was also noted under the Alternatives 1-5 that a 1500 feet from shoreline scenario was not discussed. This distance (1500') has been the limit set from shoreline since 1977 by LDWF, USFWS, COE and NMFS. The one-half mile restriction was imposed by CZM in 1982.

Lakes Pontchartrain and Maurepas

Page EIS-10 LDWF management zones. Can a percentage figure be developed for the areas open to dredging at any one time?

Pages EIS-93-95 Comparison of shell dredging and fisheries economics. Obviously the two industries (shell dredging and commercial fishing) are co-existing rather than competing. Last year - 1986, was a record year in Louisiana for fisheries harvest.

In conclusion, I wish to point out that you and your staff have made a thorough and unbiased analysis of the shell dredging activity. Thank you for allowing us to comment on these documents.

Sincerely yours,


Johnnie W. Tarver
Chief, Fur & Refuge

JWT/plh



WILLIAM J. GUSTE, JR.
ATTORNEY GENERAL

State of Louisiana

DEPARTMENT OF JUSTICE

Baton Rouge

70804

June 15, 1987

COL Lloyd K. Brown
District Engineer
U. S. Army Corps of Engineers
Post Office Box 60267
New Orleans, Louisiana 70160-0267

Re: Preliminary comments on draft shell
dredging EIS's

Dear COL Brown:

These are general comments on the two draft EIS's on shell dredging. I have, under separate cover, requested additional time within which to submit more technical comments, for reasons set out in that letter.

To begin, let me say I believe the draft EIS's to be inadequate, as I stated in my letter to you of May 18, 1987.

In my letter of May 18, I also stated that I believe it was improper to combine the DEIS hearing with the time extension requests. In your response of May 21, you stated you felt that to combine the hearings was more efficient and less costly.

B.4.1

While I can well appreciate your desire to save money, I still believe to combine both hearings was inappropriate. The effect of combining both hearings was to give the impression that the draft EIS's were accurate and adequate and, therefore, there was no choice but to renew the permits. This effect was clearly demonstrated at both hearings by numerous virtually identical comments which all basically said "The EIS's say that shell dredging doesn't cause damage, so I'm in favor of renewing the permits." To much of the public, the drafts were not seen as drafts, but as final documents from which they concluded that the permits should be renewed.

COMMENTS

As I stated above, I believe the draft EIS's are inadequate, for the reasons set out below.

B.4.2

The first comments herein will be specific comments on the Lake draft with reference to the alternatives considered,

COL Lloyd K. Brown
June 15, 1987
Page 2

B.4.2

and the 1987 Taylor reevaluation study. Following this will be comments common to both drafts: a discussion of Alternative 2 (the "No Action" Alternative); a discussion of the use of alternative materials; and a discussion of a portion of Judge McNamara's Order.

Lake Draft Alternatives

After discussing all alternatives, the Coast draft retained five for detailed consideration. The Lake draft, however, only retained two alternatives: 1) Renew the permits (as they now exist), and 2) Deny the permits.

We feel that to limit the EIS to only two alternatives is a violation of the NEPA requirements that the EIS include "a detailed statement on... alternatives to the proposed action." (NEPA Sec. 102(C)(iii)) To either renew the permits or deny the permits essentially provides no alternatives whatsoever.

We feel that this "either/or" dichotomy unfortunately polarizes the choices as "all or nothing." This polarization is unreasonable for several reasons.

First, the "Reduce Dredging Intensity" alternative was eliminated based on an economic argument. We do not feel that it is appropriate for the Corps to make an economic decision for the shell dredgers. While the figures used may be accurate (and we reserve our comments on this point), it is up to the dredgers, individually, to make a business decision on how to respond to a "reduced intensity" alternative. The Corps is not in the shell dredging business and should not be presuming what decisions the shell dredgers would make or making a business decision for them. Surely, from the standpoint of the industry, a reduction in intensity would be more favorable than a complete cessation of dredging brought about by a Corps or Court-ordered permit denial.

It is our view that this is an environmental impact statement, not an economic impact statement. The Corps cannot, at their own whim, suspend the main purpose of the EIS just because certain alternatives will have an impact on jobs.

We also believe that the "Additional Dredge Discharge Restrictions" alternative was eliminated arbitrarily. The decision to eliminate this alternative from further consideration is inconsistent with the statements that

COL Lloyd K. Brown
June 15, 1987
Page 3

"submerging the discharge pipe... appears to have some merit" and the summary statement that "the engineering studies [submitted by the shelledredging companies] demonstrate that certain modifications can be made to the dredge[s]... to reduce turbidity impacts" (emphasis added).

The only explanation given for eliminating this alternative, after having admitted that turbidity can be reduced, is the statement that each dredge is different, and that modifications would have to be "on a dredge-by-dredge basis." What's wrong with doing that? In view of the fact that the high discharge turbidity is one of the most important factors singled out by critics of shelledredging, one would think that any effort at reducing turbidity should be vigorously pursued, especially in view of the optimistic statements that the problem can be decreased.

1987 Taylor Reevaluation Study

As you are aware, Judge McNamara ordered the Corps to "take whatever steps it deems necessary...to assure that adequate information is gathered to permit informed decision-making."

As near as we can tell from reading the draft EIS, only one additional study was undertaken. I believe this is unsatisfactory for two reasons.

First, this one small study barely seems sufficient to comply with Judge McNamara's Order to assure that adequate information is gathered.

More importantly, however, is the nature of the study itself. As the draft states, "the primary purpose of the study was to resample the macrobenthos at Sikora's DC and DX stations...."

Of all the studies which the Corps could have reevaluated, why was the Sikora study chosen?

Of all the studies done on, or relating to, shell dredging in Lake Pontchartrain, many would agree that the Sikora study demonstrates most graphically the harmful effects of shell dredging. We think it is curious, therefore, that this is the one the Corps has chosen to reevaluate. If the Corps is reevaluating the Sikora study, it should include a reaction to the reevaluation by the Sikoras'.

COL Lloyd K. Brown
June 15, 1987
Page 4

To only perform one additional study, one which reevaluates a major study documenting the harmful effects of shell dredging, we believe to be an inadequate attempt at compliance with Judge McNamara's order.

Alternative 2

The discussion with regard to Alternative 2, the "No Action" (Permit Denial) alternative, leaves much to be desired. In addition to being internally inconsistent, the comment appears to say that the Corps isn't even going to consider this alternative because they believe it is outside of their jurisdiction.

On page EIS-17 of the Lake draft and on page EIS-14 of the Coast draft, virtually identical language is used with reference to the "No Action" (Permit Denial) alternative. The language states that this alternative is

"...beyond both the capability of the applicant and outside the jurisdiction of the Corps of Engineers. Permit denial is within the jurisdiction of the Corps; however, in this case, permit denial means that an alternative material would be used as a substitute for shells...."

This comment further states that the Corps would not have jurisdiction over substitute materials.

What does this mean? First, I do not understand how this alternative can be, in one sentence, "beyond... the jurisdiction of the Corps" and in the next sentence, "within the jurisdiction of the Corps."

Second, I do not understand the purpose of making the statement that alternative materials may not fall under the jurisdiction of the Corps. Assuming this to be the case (which may be an incorrect assumption), what does this fact have to do with assessing the environmental impact of dredging clam and oyster shells?

Alternative Materials

B.4.3

As I am sure you are aware, the controversy over shell dredging has provoked numerous discussions on the use of

COL Lloyd K. Brown
June 15, 1987
Page 5

alternative materials such as limestone, sand, gravel and other materials. Because of the conflicts that exist, we believe the Corps is required (by NEPA Sec. 102(E)) to "study, develop and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources."

If the Corps has done such studies outside of the EIS process, we believe that they should be included as a part of the EIS. As it now appears, the current discussion of alternative materials is totally unsatisfactory.

Both draft EIS's contain virtually identical language with respect to the use of alternative materials (Lake draft, page EIS-5; Coast draft, page EIS-6).

The draft discussion appears to do nothing more than systematically eliminate each alternative. A complete EIS would seem to call for more detailed analysis of alternatives, rather than their elimination.

B.4.3

I believe that the virtual elimination of each alternative, one by one, to be unsatisfactory for several reasons.

First, the elimination of six alternatives for the reasons that they are "unacceptable... on six or more uses" does not seem warranted. An alternative material which is not feasible for one use may be feasible for another. It seems feasible, for example, to consider the use of asphalt concrete as a base course and dolphin fill, and to use geotextile, unsuitable for those two purposes, as a feasible alternative for bedding and filter, for which uses asphalt concrete is not suitable.

Second, five alternative materials were eliminated because of low density, while at the same time admitting that such material "does not preclude the use of these materials... in uses where density is not a factor." It seems illogical to eliminate over one-third of the alternatives when they may in fact be suitable alternatives for many uses.

Of the remaining two materials, one appears to have been eliminated purely on the basis of lack of information, and one appears to have been eliminated because it is "borderline."

The net effect seems to be a systematic effort at

COL Lloyd K. Brown
June 15, 1987
Page 6

completely eliminating all possible alternatives from consideration.

The systematic elimination of alternatives also appears inconsistent when one compares the text with the accompanying table (Lake draft, page EIS-6; Coast draft, page EIS-7). Studying the table leads the reader to a different conclusion, namely, that there are numerous alternatives to shell. This is especially so when one reads the footnotes.

B.4.3

Steel slag, for example, is listed as a feasible substitute for all current and potential uses except dolphin fill, for which it is noted "more information needed - may be a feasible substitute." Similarly, spent bauxite is noted for four uses as "more information needed - would have to be stabilized."

In short, examining Table 1 leaves one with an optimistic and hopeful feeling that a replacement for shells can be found, while the accompanying text proceeds to eliminate virtually every alternative.

Judge McNamara's Order

One entire item of Judge McNamara's Order ordered the Corps of Engineers to "take whatever steps it... deems necessary... to assure that adequate information is gathered to permit informed decision-making." However, Judge McNamara did not stop there; he went on to list in some detail what such steps might include.

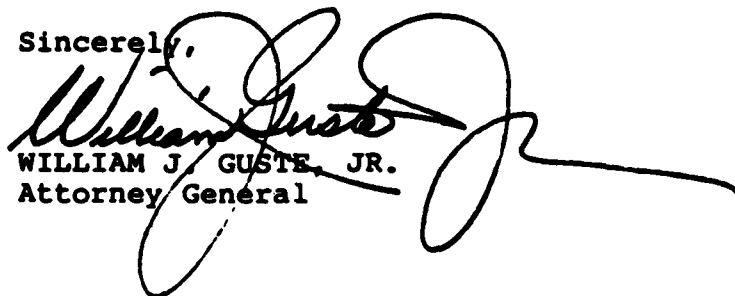
The Corps followed none of his carefully worded suggestions.

B.4.4

Judge McNamara's language is, of course, permissive. He did not "order" the Corps to take such steps, but suggested that they "might." While the language used is not mandatory, we suggest that Judge McNamara did not put such detail in his Order simply to hear himself talk. We believe that his language was intended to be taken seriously, as an indication of good faith compliance with his Order, and that to not follow his suggestions could be considered an indication of inadequate study on the part of the Corps.

COL Lloyd K. Brown
June 15, 1987
Page 7

Sincerely,



WILLIAM J. GUSTE, JR.
Attorney General

WJG,Jr/IDL/ehg

cc: Mr. Dennis Chew
Planning Division
U. S. Army Corps of Engineers
Post Office Box 60267
New Orleans, Louisiana 70160-0267

Attention: LMNPD-RE



WILLIAM J. GUSTE, JR.
ATTORNEY GENERAL

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July 14, 1987

District Engineer
U.S. Army Engineer District
Post Office Box 60267
New Orleans, Louisiana 70160-0267

ATTN: LMNPD-RE

Re: Comments on Draft Shell Dredging EIS's

Dear Sir:

On June 15, 1987, this office submitted preliminary comments on the two (2) shell dredging draft EIS's. The following are technical comments.

We must tell you quite frankly (and apologetically), that these comments are incomplete. Some of the technical experts on which we relied did not provide timely comments. The following comments are the best we could do under the circumstances.

The first section deals with specific comments on the Atchafalaya Bay (Coast) Draft. Next are comments on the Lakes Draft. And finally, there is a section on a recent field study of Lake Pontchartrain performed by Dr. Reznent H. Darnell.

Coast Draft

B.5.1

(1) The EIS should consider a "site specific" permitting alternative. There is little doubt that there are many questions and unknowns regarding the impact of shell dredging in Atchafalaya Bay and adjacent waters. Many of these questions about the environmental effects of shell dredging could be answered on a site specific basis at reasonable costs. It should be noted that every other activity in the Louisiana Coastal Zone requires site specific permits. The failure to identify site specific permitting as an option in the summary of major alternatives represents a serious oversight in the scoping process. The concept of five (5) year area permits is also short sighted.

B.5.2

(2) Data presented on water quality and sediment quality (Appendix C - Physical Environment) is insufficient. Water quality data was based on six (6) stations and sediment quality on five (5) stations. This simply cannot be statistically valid on an area of almost a quarter of a million (234,300) acres . This lack of adequate sampling far overshadows any level of sophistication in the analysis of these samples. The conclusions drawn in the draft EIS (3.4.2) and Appendix C reflect a degree of certainty that should normally only be expected after testing a suit of samples one hundred times as large as that presented in the draft.

B.5.3 (3) Conclusions regarding the backfilling of dredged cuts are inaccurate. In the section on Sediment Physical Characteristics, the discussion on textural composition and bulk density (C-32 and C-33) considers whether material that is discharged over the cut will fill the trench in a reasonable period of time. We dispute the statements made on page C-33 and 34 which indicate that most of the material will fall back into the dredged cut. There is sufficient current velocity in the area in question during a significant part of the annual flood cycle and daily tidal cycle to carry all but the coarser material away from the area over which it is discharged to insure that the cut will, in all likelihood, not be backfilled, as stated in the draft.

B.5.4 Further, investigation of 1981 Corps of Engineers' hydrostatic survey data and accompanying fathometer traces show a series of excavations six to thirteen feet below normal bay bottom when compared to the 1977 hydrologic survey. The position of these excavations are clearly directly in the path of delta growth. Further, examination of layouts of dredging excavations provided by Radcliff Materials shows a very close match between the excavations indicated on a bathymetric map and the charts showing shell mining activities. This demonstrates that these excavations are indeed shell dredging cuts and that typical shell dredging activities do not result in the refilling of the dredged cut.

B.5.4

In our opinion, this shows potential damage to the developing delta. We remind the Corps that Judge McNamara, in his judgment in this case, ordered the Corps to "analyze the possible impact of shell dredging on . . . [t]he emergence of the Atchafalaya Bay Delta."

B.5.5

(4) The statement (page D-33) that "once the reef becomes covered with an overburden of mud, it serves no identifiable, useful purpose," is incorrect. Shell reefs clearly help support loads applied to the substrate. This, in fact, is why the oil industry lays shell pads in coastal bays to support the weight of flooded drilling barges. Sediment loading from the Atchafalaya River has compressed Holocene sediment deposits which compression would likely have been lessened if the natural shell pads had been left in place.

B.5.6

(5) "Literature Cited" (EIS-107) is deficient in its treatment of the deltaic process. Attached for your information is "Atchafalaya Publications," compiled by the Center for Wetlands Resources.

B.5.7 (6) The breakdown of zones is arbitrary. This draft EIS, covering zones 1-3, is very artificial since it does not include zones 4-9 as integral parts of the regional ecosystem. The overall cumulative impact to the biology of the region can only be properly evaluated when the entire region is examined, and the ecological interrelationships of the entire nine (9) zones is analyzed. To conclude that there will be little, if any, negative environmental impact to the entire area's biology, based on an examination of zones 1-3, is premature.

B.5.8 For example, many species of fish spend only a portion of their life cycle in zones 1-3. Numerous species use zones 1-3 as nursery areas for part or all of their first year of life (Thompson and Deegan, 1983). Reaching the juvenile and sub-adult stage of their life cycle, they move into other areas of the system or towards the Gulf of Mexico. The draft EIS does not address this cumulative impact.

B.5.9 (7) The conclusion that if permits are denied "detrimental impacts attributed to dredging will cease" (EIS-45 and others), is incorrect. (Incidentally, it is interesting to note that the Corps does not even admit there are impacts, but only impacts which are "attributed to" dredging). Many of the alterations inflicted on the ecosystem will last for years to come. Altered flow

B.5.9 patterns will continue as long as the changed geomorphology patterns exist. Disrupted life cycles and lowered biological populations of certain species may take several strong reproductive year classes to remedy. Goeden (1982) reported that when ecological disruption removed or altered the

B.5.10 pollution levels of certain "keystone predators," the entire community structure remained altered even after the causative disruptions ceased.

B.5.11 (8) The conclusion that dredged cuts provide cold water refuge for certain fish is incorrect. The draft EIS suggests (S-4) that the dredge holes "may provide a place of refuge for fish during the passage of cold fronts." Research in the Atchafalaya Delta (Thompson and Deegan, 1983) discussed the problems of temperature refugia and found that deeper areas did not provide any shelter from the cold waters. Dredged holes cannot be listed as a benefit (EIS-17) to existing fisheries.

B.5.12 (9) The "Cumulative Impacts of Alternatives" table is incomplete in several respects.

B.5.13 First, there is little, if any, consideration for the environmental improvements to the area that could result from the cessation of dredging. Under the "permit denial" alternative, the writers went so far as to call the lack of deep dredge holes a loss of benefits. This is absurd.

B.5.14

Second, the table does not discuss the negative impacts of shell dredging on the strong recreational fishing that occurs in the area. There are three (3) major recreational fishing rodeos that use the inside waters of the Atchalafaya Bay system. These rodeos, as well as many other aspects of recreational fishing, are important to the economy of the region and are not adequately evaluated. The statement on page S-6 that there is low recreational use of the waters of the project area is simply not true.

B.5.15

Third, there is a strong commercial gill net fishery that has been ignored in the draft. Dredging actions have strong potential negative impacts for both blue catfish and spotted sea trout, yet these are not addressed.

B.5.16

(10) The conclusion that dredging causes only a "temporary increase in turbidity" is an over simplification. Natural turbidity is lower during times of decreased freshwater input and periods of calmer weather. The lower reaches of both Four League Bay and Atchafalaya Bay contain waters of higher salinity and correspondingly increased clarity. These waters provide a natural period of clearer waters with less suspended sediments. In shallow areas of Four League Bay, the entire water column has been observed to be clearer, with the bottom being visible in three to four foot depths.

B.S.17 During these periods, many of the more marine-oriented fishes found in the Gulf of Mexico enter these regions, essentially using them as nursery grounds. Shell dredging will disrupt this natural pattern, resuspending the bottom materials and mixing the two-layer system that develops in the deeper waters. The action of the dredges probably prevents these natural patterns from forming, thus interfering with the natural movement cycles of these fishes.

Lakes Draft

(1) Throughout the draft there are numerous comments repeating two general themes: 1) "Dredging activity is not the only activity impacting Lake Pontchartrain" and, 2) "There is little quantified data available to assess what portion of impacts to the lake is attributable to shell dredging."

Here are some typical examples of the often repeated "dredging is not the only activity" and "there is little quantified data" themes:

Grass Beds

"Shell dredging is only one of many activities that may have contributed to this increase [in turbidity]".

"[I]t is not possible to quantify the impacts of shell dredging on long-term turbidity increases."

Fisheries

"It is difficult to quantify the impacts of shell dredging to fishery production."

"[M]any other factors also affect the health of Lake Pontchartrain."

Shrimping

"Shrimping has been implicated as a factor involved in several apparent impacts which have occurred in Lake Pontchartrain."

"Little is known concerning the alteration of bottom sediments as a result of shrimping."

Turbidity

"[I]t is difficult to quantify the magnitude of turbidity changes in the lake."

First, with respect to the "other factors" statement, we point out that just because there are other factors does not lessen the detrimental effects of dredging.

Second, with respect to the "little quantified data" statement, we humbly suggest that this goes to the very heart of whether or not this EIS will be adequate. It is the Corp's job, as part of the EIS process, to assure there is enough data. If there is not enough data available now, it is the Corp's responsibility to get it. We remind the Corps that Judge McNamara ordered the Corps to "take whatever steps it . . . deems necessary . . . to assure that adequate information is gathered to permit informed decision-making."

(2) The draft underestimates the area and duration of time that Lake Pontchartrain can remain at near-freshwater conditions. In their study, Thompson and Fitzhugh (1985) showed monthly isohaline maps of Lake Pontchartrain demonstrating that there are time periods, not influenced by Bonnet Carre waters, where significant areas of the lake have low salinity, non-flocculating conditions.

(3) The statement that "motile organisms have the ability to avoid or vacate areas of excessive turbidity" (EIS-67) is misleading. First, even if this statement is true, it fails to recognize that the dredging drastically alters the habitat of these organism's, which may be the single most damaging factor associated with shell dredging. Second, determination of what constitutes "excessive turbidities" is not

known for many of the species that use Lake Pontchartrain for all or parts of their life cycle.

(4) The draft attempts to implicate shrimping as a cause of bottom disturbance (EIS-122 et seq.). While there may indeed be some disturbance of the bottom associated with shrimp trawling, it is misleading to suggest that shrimping is somehow associated with the degradation of the lake. There is no way one can equate a set of trawl boards that disturb the immediate bottom surface or several inches into the substrate with a dredge "fish-mouth" cutting 2 to 3 feet into the bottom. Also, shrimping is more seasonal, allowing for greater periods of recovery time. Finally, and perhaps most significantly, trawls are no longer scraping a hard bottom, as they would have in the 1950's, but are dragging through the unconsolidated, oozy, soft bottom caused by shell dredging.

(5) The discussion of Secchi depth readings in Appendix C is incomplete and misleading. On page C-51, the statement is made that "during the warmer months, depths in excess of 5 feet were commonly measured." While this is true, it is only a half truth. Actually, depth readings were commonly 15 to 16 feet, the total depth of the lake, since the Secchi disc could often still be seen after being lowered to the bottom of the lake. Thompson and Fitzhugh (1985) reported

that present maximum Secchi depth values for the open lake (under most normal lake conditions) are similar to the yearly averages from the mid 1950's, indicating a large decline in lake clarity.

Field Study

The following is an abstract of an unpublished "Report on Lake Pontchartrain Field Study" performed by Dr. Reznent M. Darnell on June 19, 1987 of the bottom conditions in the lake.

During the past three and a half decades, the surface sediments and molluscan fauna of the southern half of Lake Pontchartrain have undergone profound changes. During the early 1950's bottom conditions throughout most of the large western sector of the Lake sediments were of firm mud mixed with considerable quantities of dead whole and broken Rangia shells and fine shell hash. Near Pass Manchac and off the mouths of the Tangipahoa and Tchefuncte Rivers there were soft shoals of fine-particulate silt. Sandy bottoms were found near shore around Little Woods. Organic detritus, recognizable as bits of decomposing Spartina grass, was widely distributed on and within the surface sediments throughout much of the Lake, but it was particularly prominent along the south shore between

the West End Yacht Harbor and the Bonnet Carre Floodway. During summer and fall a thin layer of blue-green algae coated the bottom surface of most of the Lake, and in the fall months, this would achieve a thickness of about one centimeter in the middle two-thirds of the Lake west of West End.

The bottom molluscan fauna was dominated by live Rangia clams. Bottom densities of large adult clams (number per square meter of bottom) exceeded 100 throughout most of the western sector of the Lake except near the south shore, offshore from Pass Manchac and near Cane Bayou. In most of these areas densities in excess of 50 prevailed. Small Rangia clams were widespread. Small mussels (Congeria) were found throughout the western sector of the Lake attached to the mature Rangia. Brachiodontes (a mussel) was present in the more saline eastern sector, but small amnicolid snails (Probythinella and Texadina) were widespread and abundant throughout the western sector in both nearshore and offshore habitats.

By striking contrast, surface sediments are no longer firm except in nearshore areas. Offshore, the sediments are primarily soft, gray, oozy mud. Thick layers of dead Rangia shells and shell hash, which

formerly were a characteristic feature of the bottoms throughout the Lake, are now deeply buried or absent altogether, except in the nearshore environment. Organic detritus, which formerly was a characteristic feature of the southern and middle portions of the Lake, is now scarcely recognizable, except at a few nearshore stations. The surface coating of the blue-green algal ooze is still recognizable at many of the stations examined, although it is extremely thin.

The bottom molluscan fauna is marked by the absence of adult or sub-adult Rangia throughout the great body of the Lake where they were formerly extremely abundant. Adults were found only at nearshore stations, and subadults appeared near the south shore and on firmer bottom under the causeway. Larval and very young Rangia were found in some abundance at most of the stations examined. These were undoubtedly derived from adult populations found in Lake Maurepas and in nearshore environments of Lake Pontchartrain. The small mussel, Brachiodontes, which only exists as a symbiont on large Rangia has

disappeared from the offshore areas, but is still found locally near the south shore. Small gastropods, formerly widespread, were found in abundance only near the south shore.

There has been a dramatic shift from hard to soft bottoms. Rangia shells and shell hash, which formerly gave firmness to the bottoms, are now virtually absent. For these (and possibly other) reasons the soft bottoms cannot support the weight of adult and subadult Rangia. The existing molluscan biomass are only a very small fraction of the former mass of living mollusks found throughout the Lake bottom. Very clearly, there has been a dramatic reduction in the available food supply for bottom-feeding fishes, shrimp, and crabs.

Many human activities have resulted in the physical and environmental changes of Lake Pontchartrain. When multiple factors are involved it is sometimes difficult to pinpoint causative agents of change, but in the present situation the case seems to be quite clear. Extensive shell dredging has removed the dead Rangia shells and shell hash that formerly contributed to sediment stability. Shell dredging has

also produced enormous volumes of very soft sediments which now blanket the offshore areas of the Lake. These factors have combined to eliminate the dominant populations of adult Rangia and associated biota.

I take strong issue with the statement (top paragrah, p. S-11) that "from a biological standpoint, the depletion of fossil shells has no apparent significant impact." This has been the prevailing view up until the present time. However, now that I have been able to examine the sediments directly, I am sure that the loss of dead shells and shell hash has greatly contributed to the loss of firmness and stability of the sediments and to the consequence serious loss of bottom fauna.

Trusting that you find these comments helpful we are,

Sincerely,

WILLIAM J. GUSTE, JR.
ATTORNEY GENERAL

BY:


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June 5, 1987

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ATTN: LMNPD-RE

Dear Sir:

- We are writing to comment on the Draft EIS entitled Oyster Shell Dredging in Atchafalaya Bay and Adjacent Waters, Louisiana.**
We question the adequacy of the EIS, especially as it relates to Fourleague Bay. We believe that shell dredging should not be allowed in Fourleague Bay for a number of reasons. First, there are serious questions concerning the impacts of shell dredging which are not addressed or addressed inadequately in the EIS. Second, there is an active research program in the Fourleague Bay area which will aid in answering these questions. Dredging in Fourleague Bay has the potential to invalidate much of the ongoing research and make finding a solution to these questions much more difficult. Dredging could also harm the economically important fishery which depends in part on Fourleague Bay for its existence.
- C.1.1
- C.1.2
- C.1.3

- Scientific and Environmental Questions and Issues.** For over a decade there has been considerable research carried out in Fourleague Bay. Results have illustrated the extreme complexity of the ecosystem and have generated hypotheses concerning the functioning of shallow estuarine areas and the importance of this bay in particular to the coastal fishery of Louisiana. We outline some of these hypotheses below and show the potential impacts of shell dredging.
- C.1.4

Over the course of a year, in response to the natural cycle of the Atchafalaya River, turbid, nutrient-rich river water flows into

shallow Atchafalaya and Fourleague Bays. The degree of influence of the plume of river water on Fourleague Bay depends on river discharge, tides and wind conditions. During the spring, fresh water fills the bay for long periods of time. From August to November during low river flow, the bay is more often dominated by saline Gulf waters, but there is still some fresh water input. Major flows of nutrients enter the bay during the spring flood and it is this pulse which supports the initial phytoplankton blooms in spring. However, we have found that this input is directly responsible for only a part of the annual organic production in the bay. This is true for two reasons. First, when river water flows into the bay, it introduces high concentrations of suspended sediments as well as nutrients. This creates a light limiting effect on the algae and depresses production as indicated by Randall (1986) and Randall and Day (1987). Second, a significant part of the nutrient input introduced in spring is apparently taken up into the bottom sediments. We believe that it is the regeneration of these stored nutrients which is responsible for the majority of the plankton production during late summer and fall when riverine nutrient input is low. Thus, the nutrient regime in Fourleague Bay is, to a significant degree, controlled by sediment regenerative processes in addition to external inputs.

C.1.4

In spring when nutrient-rich river water flows over an area of bottom, there is a strong uptake of inorganic nutrients, especially nitrate and organic matter (Teague 1983). When higher salinity water flows over the same area (on the rising tide or in fall during low river flow) ammonium is released, fertilizing the water column. Spring inputs of riverine nutrients can be thought of as "charging" the sediment nutrient supply via direct uptake by benthic processes such as dissimilatory nitrate reduction to ammonium, and incorporation by phytoplankton which are then grazed or die and sink to the sediments. Throughout the summer, as bacterial decomposition occurs and redox conditions change, these sediment nutrients are liberated from the sediments and released to the overlying water column. This uptake and release cycle takes place on time scales from a few days to seasonally although the major cycle involves net uptake during high river flow and net release during the summer and fall. The composition and three dimensional structure of the sediments are extremely important in regulating these nutrient recycling processes.

Released nutrients stimulate primary production in the clear, high salinity water that overlays these sediments during summer and fall. The sediment charging-release cycle stabilizes the nutrient supply and fertilizes the overlying water column, thus extending the growing period and enhancing overall primary production in Fourleague Bay. We believe that compact sediments in upper Fourleague Bay (Teague 1983) are especially important in retaining nutrients for a longer period of time.

C.1.4 A common feature observed in Fourleague Bay during much of the year is the formation of frontal discontinuities in the zone of mixing of fresh and salt water. These discontinuities are ephemeral and seem to move up and down the bay in response to wind, tides, and river discharge. While these fronts may not cover a large area of the bay, they are apparently critical zones of biological productivity. They occur at the points where riverine nutrient loading is still quite high, but where enough water clarity exists to permit high phytoplankton production. Preliminary results indicate that, at certain times, these fronts may be responsible for the majority of organic production in the bay. These sites may be even more important as feeding zones for zooplankton and fish. In our current studies we have found that organisms seem to concentrate at these zones. Zooplankton productivity is high along the fronts, probably because of intense grazing on live and dead organic material. The copepod Acartia tonsa is the dominant macro-zooplanktonic organism in regions of Fourleague Bay with salinities greater than 5 ppt. This copepod plays a dominant role in the transfer of energy and materials within the bay. It is a major component of the community grazing on phytoplankton and perhaps microzooplankton and is the major component of the diet of organisms of higher trophic level, particularly larval and juvenile fish and ctenophores.

Recent work has shown that a number of commercially important migratory fish species spend several weeks in the open bay and undergo a series of characteristic changes there such as shifting from plankton to detritus consumption (Deegan 1985). It is generally recognized that density fronts or discontinuities at riverine discharge plumes are important sites for energy transfer and intense biological activity which potentially can support large phytoplankton blooms and zooplankton stocks. The timing and spatial occurrence of fish spawning tends to take advantage of such periods and areas of high productivity. Changes in environmental conditions can not only affect the food supply, but also the transport and ultimate

C.1.4

recruitment success of larval fish populations (see Norcross and Shaw 1984 for a review). Preliminary data from plankton tows in Fourleague Bay show that larval fish are concentrated at the fronts, and we postulate that juvenile fish actively seek out these zones in response to the high food availability of phytoplankton, zooplankton, and organic detritus.

With this information in mind, we want to point out several potential impacts of shell dredging which were poorly addressed in the EIS:

C.1.5

An important area of concern regards turbidity which will result from dredging activities in Fourleague Bay. We are concerned that the sediments suspended in the dredging process may deleteriously affect the phytoplankton community of the bay, the larval fish which use the bay as a spawning and feeding area and the substantial oyster reef areas which occur in Oyster Bayou and a considerable section of lower Fourleague Bay. The EIS does not demonstrate an adequate understanding of the fate of resuspended sediment which would occur in Fourleague Bay. Sediment suspension duration depends on the type and grain size of sediments as well as the turbulence and current speed in the bay. The EIS relies on a single series of studies of sediment suspension by the Dredged Material Research Program to dismiss the harmful effects of dredging without regard to the real impact of dredging Fourleague Bay sediments. The sediments of the bay are fine-grained clayey silts. As pointed out in the EIS, "... there are no known sets of dredge discharge condition data, ... comprehensive water column turbidity plume measurements, and corresponding settling velocity determinations of bottom sediments, available from the study area to verify an existing predictive model against." (pg C-23). So while down-playing the effects of resuspension on water column turbidity on the one hand, the EIS simultaneously acknowledges the futility of trying to make such predictions for this area because of lack of local data. However, based on extensive research, we feel that there is the significant possibility that there will be a significant increase in suspended sediments in Fourleague Bay as a result of dredging and that a significant portion of these suspended sediments could be transported down-bay. The net current direction is down-bay, toward the lower bay oyster reefs. Silting of oyster reefs may become a problem as these filter-feeding organisms are highly sensitive to increases in suspended material. Further analysis of this ramification of dredging is mandatory before proceeding. In the EIS

C.1.6

C.1.6

no discussion is given of the current status of the oyster communities in the lower bay and Oyster Bayou which are healthy and exploited economically.

C.1.7

As detailed in pages D-13 to D-17 of the EIS, numerous negative impacts on the fish community of Fourleague Bay can be expected as a result of dredging operations and we concur with the listed hazards to spawning areas, fish physiology and behavior. However, we fail to understand on what basis these problems can be characterized as "minor." In light of the paucity of data on the degree and duration of the sediment plume created by the dredging we advise investigation of these concerns.

C.1.8

The EIS states that much of the disturbed sediment would fall out in a fluid mud mound close to the source of resuspension. We believe this unconsolidated mound would be more susceptible to resuspension by currents and wind events, especially in a water body as shallow as Fourleague Bay (1.5 m). The same applies to the material replaced in the dredge scar. In either case, dredging activity will loosen the relatively firm and well-compacted sediments in the upper bay exposing them to rapid resuspension. In the lower bay, where sediments are loose and unconsolidated, the effect of dredging would be even worse. Studies in Lake Pontchartrain have shown that sediments redeposited after shell dredging are much more easily resuspended (Sikora et al. 1981). It is surprising to us that this reference was not cited in the EIS since it is a report prepared for the U.S. Army Corps of Engineers. Another Louisiana study has shown that during the May-September period, winds were sufficiently strong to completely mix Lake Cataouatche to the bottom on the average every third day (Hopkinson et al. 1985). Since Fourleague Bay is shallower than Lake Cataouatche, it is probably mixed more frequently. Thus while shell dredging in Fourleague Bay will likely directly lead to higher suspended sediment levels, indirectly the effects of dredging may be much worse, resuspending loosened material for a significant length of time after the dredging process is completed.

C.1.9

We believe that elevated sediment suspension will lead to adverse changes in nutrient recycling and reduced aquatic primary production (APP). APP in upper Fourleague Bay is severely light limited at present. Increased turbidity levels will cause further reductions in APP. Productivity at frontal zones where fresh and salt waters mix may also be affected. As indicated above, these frontal

C.1.9

zones are productive because as light and nutrient levels are lowered there is a zone where optimum light and nutrient conditions occur. Increased turbidity levels would probably lead to sustained low light conditions while nutrient levels are lowered due to benthic uptake. As mentioned above, because of the high productivity at these localized fronts, they are especially important to the overall productivity of the estuary. Reducing water clarity around these areas may severely change the light-nutrient balance required for maintaining the high production of Fourleague Bay. The consequences to the higher trophic levels including larval forms of numerous fish species remain to be determined.

C.1.10

Our second concern deals with the destruction of the bottom sediment structure which will be caused by dredging. It has been demonstrated that nutrient recycling between the water column and sediments is strongly dependent on the structure of the sediments and the distribution of anaerobic and aerobic zones as well as health of the biotic community. The maintenance of the sediment Eh profile is necessary to the processes of nutrient uptake and release. While claims may be made that dredging will actually fertilize the overlying water column by releasing nutrients, our studies have shown that it is not the magnitude of nutrient release that is important but the timing of release. As we detailed above, the charging of sediments with nutrients in spring and the release in summer is probably essential to the sustained phytoplankton production observed in Fourleague Bay throughout the spring to fall period. Perturbation of the sediments and release of these nutrients "unscheduled" will not help, and will almost certainly lower overall phytoplankton production.

C.1.11

Destruction of the upper sediment zone will depopulate the benthic fauna responsible for many of the reactions involved in the sediment nutrient cycle. Live Rangia clams, crabs, as well as extensive meiofaunal communities will be destroyed. Sikora et al. (1981) have detailed the effects of dredging on such communities and the difficulty in repopulating a disturbed zone. Comparisons of Lake Pontchartrain benthic communities between 1954 and 1974 and 1981, before and after dredging, have shown a tremendous decline in the size and numbers of Rangia clams in the area. Sikora et al. (1981) believe that this reduction was probably encouraged by the great decrement in bulk density in the Pontchartrain sediments.

C.1.12

In summary, we feel that dredging activity in Fourleague Bay would disrupt nutrient cycling, reduce primary productivity, reduce secondary productivity, kill an undetermined number of commercially and ecologically important organisms, and render the bay habitat less suitable for certain organisms for a substantially longer period than the dredging process itself.

C.1.13

The studies mentioned above demonstrate that the Atchafalaya Delta-Fourleague Bay area is an area of active research. It one of the 3 or 4 most intensively studied U.S. coastal areas of high freshwater input. For over a decade, a series of studies have been carried out on the geology, hydrology, chemistry, biology and ecology of the area (A partial list of publications is attached). The area is a research zone of state and national importance. Work has been supported by the National Science Foundation, U.S. Army Corps of Engineers, the Environmental Protection Agency, U.S. Fish and Wildlife Service, the U. S. Soil Conservation Service, the State of Louisiana (the Departments of Natural Resources and Wildlife and Fisheries), local governments and private interests. This work has proved very important to the State of Louisiana, detailing how to manage an area with high fresh water input. Since this is an area of active land building, the lessons learned here have broad application over the coastal zone. Major research efforts which will be carried out over the next five years could definitively answer some of the questions put forward here. Such research would be rendered much less valid by extensive dredging in the the area. We suggest that the area be designated as a research zone.

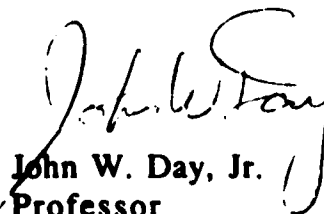
C.1.14

In light of these points, we believe that it is possible that economic losses due to lowered natural resource productivity will be greater than the economic benefit of the shell dredging in Fourleague Bay. The potential impacts on the natural resource base and on research cannot be answered with existing information. We strongly advise that the permit for dredging in Fourleague Bay should not be extended until such studies are carried out in investigating these questions.

Sincerely,



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- Sikora, W. B., J. P. Sikora, and A. M. Prior. 1981. Environmental effects of hydraulic dredging for clam shells in Lake Pontchartrain, Louisiana. Center for Wetland Resources Publ. No. LSU-CEL-81-18. Prepared for U. S. Army Engineer District, New Orleans under contract No. DACW29-79-C-0099.
- Teague, K. G. 1983. Benthic oxygen uptake and net sediment-water nutrient flux in a river-dominated estuary. M. S. thesis. Louisiana State Univ., Baton Rouge, 72 pp.

There follows a partial listing of publications and reports which have resulted from recent study of Fourleague Bay:

Refereed Articles

Baumann, R. H., J. W. Day, Jr., and C. A. Miller. 1984. Mississippi deltaic wetland survival: Sedimentation versus coastal submergence. *Science*, 224:1093-1094.

Caffrey, J. and J. W. Day, Jr. in press. Variability of nutrient and suspended sediments in Fourleague Bay, Louisiana, and the role of physical factors. *Estuaries*.

Costanza, R., F. Sklar, and J. W. Day, Jr. 1986. Modeling spatial and temporal succession in the Atchafalaya/Terrebonne marsh/estuarine complex in south Louisiana. pp. 387-404. In: D. Wolfe (ed.). *Estuarine Variability*. Academic Press, N. Y.

Day, J. W., Jr., C. Madden, and J. Randall. accepted and in revision. Coupling of freshwater and marine systems in the Mississippi River Deltaic Plain. *Limnology and Oceanography*.

Randall, J. and J. W. Day, Jr. accepted and in revision. Dynamics of aquatic primary production in turbid Louisiana estuary. *Netherlands J. of Sea Research*.

Sklar, F., R. Costanza, and J. W. Day, Jr. 1985. Dynamic spatial simulation modeling of coastal wetland habitat succession. *Ecological Modeling*. 29:261-281.

Stern, M., J. W. Day, Jr., and K. Teague. in press. Seasonality of materials transport through a coastal freshwater marsh. *Estuaries*.

Teague, K., J. W. Day, Jr., and C. Madden. accepted and in revision. Sediment oxygen uptake and net sediment-water nutrient fluxes in a river-dominated estuary. *Estuaries*.

Theses

- Caffrey, J. 1983. The influence of physical factors on water column nutrients and suspended sediments in Fourleague Bay, Louisiana. M. S. thesis. Louisiana State Univ., Baton Rouge, 85 pp.
- Deegan, L. A. 1985. The population ecology and nutrient transport of Gulf menhaden in Fourleague Bay, Louisiana. Ph.D. diss., Louisiana State Univ., Baton Rouge, 134 pp.
- Denes, T. A. 1983. Seasonal water transports and circulation of Fourleague Bay, Louisiana. M. S. thesis. Louisiana State Univ., Baton Rouge, 110 pp.
- Madden, C. J. 1986. Distribution and loading of nutrients in Fourleague Bay, a shallow Louisiana estuary. M. S. thesis. Louisiana State Univ., Baton Rouge, 144 pp.
- Miller, C. A. 1983. Sediment and nutrient inputs to the marshes surrounding Fourleague Bay, Louisiana. M. S. thesis. Louisiana State Univ., Baton Rouge, 60 pp.
- Randall, J. M. 1986. Dynamics of aquatic primary production in a turbid Louisiana estuary. M. S. thesis. Louisiana State Univ., Baton Rouge, 80 pp.
- Stern, M. K. 1986. Water and materials fluxes in a freshwater tidal channel in coastal Louisiana. M. S. thesis. Louisiana State Univ., Baton Rouge, 69 pp.
- Teague, K. G. 1983. Benthic oxygen uptake and net sediment-water nutrient flux in a river-dominated estuary. M. S. thesis. Louisiana State Univ., Baton Rouge, 72 pp.

DRAVO BASIC MATERIALS COMPANY, INC.

P. O. Box 2088
Mobile, Alabama 36652
205 432-2851

A Dravo Company

June 8, 1987

Mr. John Weber, Chief
Environmental Analysis Branch
Planning Division
New Orleans District, Corps of Engineers
P. O. Box 60267
New Orleans, Louisiana 70160

Re: LMNPD - Shell Dredging EIS

Dear Mr. Weber:

Our comments on the Draft Environmental Impact Statement, Atchafalaya Bay and Adjacent Waters, Louisiana area as follows:

- C.2.1 | 1) A history and summary of all the previous public hearings (including the Louisiana Coastal Commission hearings) on shell dredging should be given in the introductory remarks.
- C.2.2 | The economics section should show the cost of unemployment to the State of Louisiana. For example, unemployment benefits due persons averaging over \$20,000 annual income is \$205.00 per week for 26 weeks. Extended benefits are an additional 13 weeks at 1/2 rate, or \$102.50 per week. Therefore, the average cost of each employee affected would be \$6,662.00. (Re: Louisiana Department of Employment Security).
- C.2.3 | 2) The EIS title would more correctly be Shell Dredging in Atchafalaya Bay and Adjacent Waters, Louisiana rather than "Oyster Shell Dredging".
- C.2.4 | 3) Page S-5 First sentence should be 1,000 feet from exposed subaerial reefs.
- C.2.5 | 4) Page S-8, Item S.4 We don't see where Item S.4, Mitigation is pertinent to the EIS and request that it be deleted. The Mitigation clause as proposed in the Coastal Use Permit states, "As compensation for disturbance of the water bottom during dredging". We maintain that this is a misleading statement and does not fully reflect the intent of the Shell Industry or the Louisiana Department of Wildlife and Fisheries. Over the past years, shell donations have been handled on a case by case basis with LDWF and the individual parishes.

Mr. John Weber
June 8, 1987
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|--------|--------------------|--|
| C.2.6 | 5) Page EIS-4 | First sentence, dredges on the Central Coast are <u>not</u> self-propelled. The only movement made by the dredge itself is a slow walking motion caused by raising and lowering the "spuds". (See figure EIS-6). |
| C.2.7 | 6) EIS-9, Item 1 | We suggest a more precise boundary between Upper and Lower Four League Bay such as the trans-continental pipeline which runs from Big Carencro Bayou to Lower Mosquito Bayou. |
| C.2.8 | 7) EIS-11 | First paragraph, fifth line, "propeller wash". There is no propeller wash associated with a "spud" dredge except from boat traffic. |
| C.2.9 | 8) EIS-12, 2.2.4.2 | Additional dredges are not <u>impractical</u> . The shell industry has no desire at this time to increase the number of dredges. |
| C.2.10 | 9) EIS-14, 2.4. | Mitigation. Please see our comment No. 3 for S-8, Item S.4. Also, Cypremort Point Reef is located <u>Northwest</u> in Vermilion Bay. |
| C.2.11 | 10) EIS-15, 3.1. | Volume of shell. We suggest that the shell reserves and map which was supplied to the COE in October 1986 be used. (Map attached). |
| C.2.12 | 11) EIS-20 | Last paragraph, The average water depth in East Cote Blanche Bay is approximately 8 feet, see third paragraph, first sentence on C-17. |
| C.2.13 | 12) EIS-38, C-37 | "Resuspended material settles out within 200 feet". EIS-42, last paragraph, "Settles out within 500 feet". The 200 foot distance is correct. |
| C.2.14 | 13) C-29 | Last paragraph, there is no propeller wash. |
| C.2.15 | 14) Figure EIS-8 | The attached map more accurately identifies the shell reserves on the Central Coast. |

Mr. John Weber
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Page 3

C.2.16

It would seem appropriate at some point in the EIS to show National Marine Fisheries catch statistics which show record catches in Louisiana for 1985 and 1986. Obviously, the shell industry isn't competing with commercial or recreation fishing.

All in all, you and your staff have done a detailed and thorough analysis of the shell dredging activity. The EIS certainly confirms what the COE Environmental Assessments' on Shell Dredging have been saying for the past fifteen years.

Thank you for allowing us to make these comments.

Sincerely,



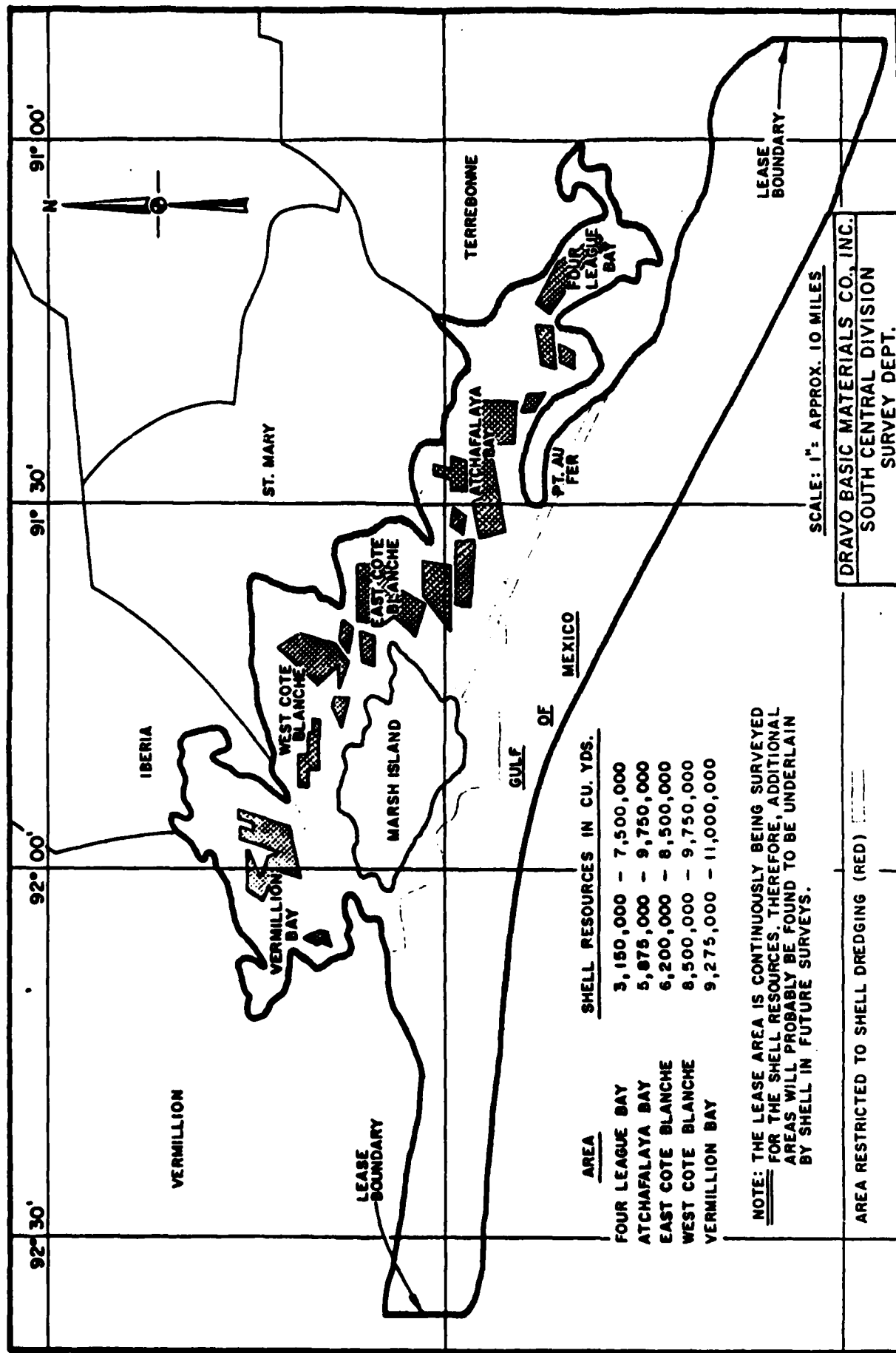
R. D. Palmore

RDP:vr

Enclosures

cc: Mr. H. Donovan Ross (w/encl.)
Mr. E. A. Weber (w/encl.)
Mr. James A. Burton (w/encl.)

SHELL RESOURCES CENTRAL COAST OF LOUISIANA OCTOBER 1986



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Colonel Lloyd K. Brown
U.S. Army Corps of Engineers
P.O. Box 60267
New Orleans, Louisiana 70160

June 14, 1987

re: Shell Dredging DEIS Comments

Dear Colonel Brown:

The plaintiffs in Louisiana v. Lee submit the following comments on the Draft Environmental Impact Statements referenced above. They also adopt the comments by James Blackburn on behalf of Save our Coast. The affidavits submitted to the Court in Louisiana v. Lee are also made a part of these comments.

Initially, the final environmental impact statements should make clear the following facts:

- C.3.1 | 1) The Corps does not monitor or regulate the impacts of shell dredging;
- C.3.2 | 2) The Louisiana Department of Wildlife and Fisheries receives royalties from shell dredging and is, therefore, in a conflict of interest situation with regard to shell dredging;
- 3) The Corps' previous conclusion that no significant impact resulted from shell dredging in Lake Maurepas was tragically erroneous.

C.3.3 | The final environmental impact statements should also acknowledge the extent to which the Corps has relied upon facts, arguments, and conclusions of the shell industry and their consultants in preparation of the documents.

Environmental Setting

The following should be placed in the Final Environmental Impact Statements under the heading 'Environmental Setting' and should then be discussed in other parts of the Environmental Impact Statements as appropriate.

Colonel Lloyd K. Brown
June 14, 1987
Page Two

C.3.4

The final environmental impact statements should identify with maps, charts and in text the location of all exposed and buried reefs and shell deposits, showing dimensions and volume. If this is not known, the appropriate surveys should be done to provide such basic information.

C.3.5

The final environmental impact statements should identify the number of users and frequency of use of the impacted areas, and should specifically identify the number and frequency of use by:

- 1) commercial fishermen by type, e.g., crabbers, shrimpers, oyster fishermen, etc.;
- 2) recreational boaters by type, e.g., sailors, outboard, large vessels, etc.;
- 3) swimmers;
- 4) passive users, camp owners, waterfront restaurant customers, sea-wall visitors, beach combers, bird watchers.

C.3.6

The final environmental impact statements should include definitive and precise documentation on the decline of the lake and its benthos, as it relates to fisheries, grassbeds, water quality and clarity during the history of shell dredging.

C.3.7

The final environmental impact statements should identify with maps, charts and in text the amount, volume and location of shell, shell reefs and live clams and oysters that have been removed by the industry in the past.

The final environmental impact statements should identify those in the areas who would potentially use the waters either commercially or recreationally if the waters were not unsafe for swimming, or were less turbid and in pre-shell dredging condition.

C.3.8

The final environmental impact statements should identify all industry and commerce dependant upon the lake and Gulf waters, including seafood dealers and processors, boat dealers, repair yards, docks, tourist industry, real estate developers, etc., and determine the economic value thereof with appropriate multipliers and tax revenue calculations.

C.3.9

The final environmental impact statements should show by map and text all areas where mitigation projects have been established and completed.

Colonel Lloyd K. Brown
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Page Three

C.3.10

The final environmental impact statements should show by map and text the location in the project area of likely sites for beach erosion protection, artificial reef construction, marsh erosion protection and marsh rebuilding or restoration, and hurricane barrier construction.

C.3.11

The final environmental impact statements should by map and by text disclose the location and nature of all past Corps permitted or constructed projects which have or may have resulted in wetland loss, salinity changes, disposal of dredge or fill material into the waters of the United States, or which have or may have resulted in other physical, chemical or biological changes in these waters or waterbottoms.

C.3.12

The final environmental impact statements should include specific reference to all shell dredging generated turbidity readings exceeding Louisiana's Water Quality Criteria. The extent of the violations should be noted and should be clearly explained.

The final environmental impact statements should identify with particularity the chemical, physical and biological changes caused by shell dredging, which resulted in the closure of Lake Maurepas to shell dredging. The extent to which these changes were predictable and the extent to which they were unexpected should also be explained in detail sufficient that the reader can understand where your knowledge and data represent scientific certainty as opposed to conjecture or informed guess.

Alternatives and Economic Analysis

Scoping identified a far greater range of alternatives than you consider in the draft environmental impact statement. In the final environmental impact statements you should give the alternatives identified in scoping due consideration.

C.3.13

In the final environmental impact statements the economic evaluation should be made by a competent, objective, independent economist not paid by funds from shell dredgers, whose instructions are to look to public economic benefits and costs of shell dredging and to compare and analyze differences between the public interest, costs and benefits and those of the shell dredgers. The draft environmental impact statements erroneously assume there is nothing more to economic analysis of resource depletion than consideration of the income and the expenditures of the depleting industry and revenues to the state. Meaningful economic analysis without

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Page Four

C.3.13

regard to costs of shell dredging in terms of reduction in fisheries productivity and without detailed consideration of commercial and recreational user-values is not possible. In the final environmental impact statements inclusion of such data as that discussed above will therefore be necessary to complete the economic picture. It will be necessary to examine the extent to which shell dredging prevents alternative uses of the lakes and the Gulf, and to put economic values on these precluded uses, and to consider these values as costs of shell dredging or as benefits to reduction or cessation options. The alternative of restoring all or most of the lake bottom's natural population of clams and other benthos should merit special attention. It will also be necessary to state with specificity all assumptions underlying the economic analysis -- something lacking in your existing analysis and its supporting documents and lacking throughout the draft discussions of alternatives.

C.3.14

Meaningful economic analysis also requires a realistic examination of alternatives to shell. In discussing possible alternatives to shell, the draft environmental impact statements are inconsistent and conclusory. The chart on page EIS-7 shows that both gravel and sand are feasible substitutes for shell for all uses. This chart also shows that for every use of shell there is at least one feasible substitute. Nonetheless the document concludes that there is no substitute for shell, and without any basis for this conclusion fails to provide any considered discussion of alternatives. It does not suffice to claim that substitutes must be imported from other states when Louisiana has an abundant supply of sand and gravel, especially when sand and gravel are extracted in Louisiana under Corps regulation. Nor does it suffice to say that sand, gravel, steel slag, limestone, recycled concrete, and spent bauxite are not feasible substitutes for shell for any use because they are not feasible substitutes for shell for some uses.

C.3.15

The draft environmental impact statements assume and imply moreover that no shell dredger is in the business of supplying alternative materials to shell. This assumption is untrue and the implications misleading.

C.3.16

The final environmental impact statements must provide a more reasoned analysis. In particular, the known reserves of these substitutes should be identified and their location described. It should be determined whether substitutes are now marketed in Louisiana by the shell dredgers or by others. You should also independently determine and set forth the comparative prices of shell and alternative materials in local, regional and

Colonel Lloyd K. Brown
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Page Five

C.3.16 national markets during recent years. You should explain how the other 49 states have managed to get by without significant production of shells and without the economic disaster the draft documents project if Louisiana is required to do so.

C.3.17 The final environmental impact statements should consider, in the discussion of the no permit option and the greater restriction options, use of other materials including use of sand and gravel extracted from Louisiana as a substitute for shell, for all uses and for some uses, and should identify the extent to which increased demand for and production of such substitute materials would off-set economic effects of reduced production of shell. If substitute materials must be imported it is appropriate to consider likely increases in employment in the transportation sector.

C.3.18 The final environmental impact statements should as well consider the use of different substitutes for different uses of shell. That is, it should be recognized that one known substitute may be used in place of shell for one use, another substitute may be used instead of shell for another use, etc., and the documents should identify and examine all possible substitution combinations.

C.3.19 The draft environmental impact statements erroneously assume that indirect or multiplier effects on regional income and employment associated with the shell dredging industry differ from the effects of precluded alternate use industries or of substitute material industries. The final environmental impact statements should consider in detail the extent to which alternate use and/or increased demand for various substitutes in various combinations would off-set economic effects of reduced shell production. If shell dredging generates a more localized chain of responding than alternate or substitute industries this fact must be demonstrated, not assumed.

C.3.20 The final environmental impact statements must examine and discuss the extent to which the price of shell might be expected to rise were current levels of production to be reduced, and should project changes in profit to the industry and industry employment figures in light of these calculations.

C.3.21 The draft environmental impact statements fail to mention that 45 of the 50 states do not permit shell dredging because of expense and environmental degradation, and do not disclose the amount of Louisiana shell exported to interests outside Louisiana, thus failing to recognize the extent to which the benefits of our coastal environment are in fact exported to other states. Nor do the draft environmental impact statements

Colonel Lloyd K. Brown
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recognize that the benefits from exploiting Louisiana's coastal environment are going to private monopoly interests.

Shell Reserve Estimates

C.3.22 Your current estimates of shell reserves are greater than previous estimates, and you estimate straight-line extraction rates. In the final environmental impact statements you should give the factual basis -- measurements, calculations, basic data, source of data and method of calculation of reserves for previous estimates. The same should be given for current estimates. The final environmental impact statements should explain why straight-line depletion rates are used, when basic economic theory presumes declining volumes of production.

C.3.23 The final environmental impact statement should also examine the value of shell left in the ground and consider the value of future production as against that of present production.

Court Ordered Factors

C.3.24 The federal court order under which these environmental impact statements are prepared requires discussion of various specific parameters. These should be discussed separately and completely so that they may be understood. Facts, assumptions and conclusions should be clearly stated rather than in the "see pages # ____" format employed in the draft documents (e.g., at Lake S9-TT; at Gulf S-9-10).

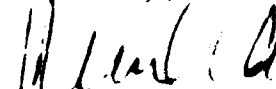
C.3.25 Shell dredging has been declared illegal on multiple grounds in *Sierra Club v. Louisiana Department of Wildlife and Fisheries*, CDC #83-2669, Opinion dated March 18, 1987, and reasons attached. The draft environmental impact statements make no reference to the illegality of the activity reviewed. The final environmental impact statements should recognize that shell dredging under existing permits has been declared to be illegal and should identify and discuss the implications of this judicial declaration of illegality. The alternatives, environmental impacts and economic impacts of legal shell dredging should be considered in the final environmental impact statements.

Colonel Lloyd K. Brown
June 14, 1987
Page Seven

Conclusion

C 3 26
Inconsistencies and contradictions run rampant through the draft environmental impact statements. It is stated for instance that fish are not harmed by shell dredging because they swim away from the dredge yet claimed that shell dredging is beneficial because fish are attracted to the dredge. It is claimed that shell removal causes delay in delta development yet also claimed that the rate of delta development is the same with and without shell dredging. It is shown that there is at least one substitute for every use of shell yet the claim is made that shell has no substitute. It is assumed that price for shell remains constant if production is reduced -- which in any but the most sophmoric economic analysis is inconsistent with the lack of available substitute. The projection of benefits from shell dredging goes so far as to speculate that employees of the shell dredging industry could not afford properly to maintain their homes and that real estate values would decline with reduced production of shells. However, there is no consideration of the most obvious and elementary positive effects of increased demand for substitutes. The documents state that permit denial is both outside the capability of the applicant and outside the jurisdiction of the Corps -- when it is of course not outside the capability of anyone to refrain from a given activity, particularly where a court has held it is an illegal activity; and when it is the legal duty of the Corps to deny a permit if denial is warranted. You claim that your draft environmental impact statements are a basis for public interest review, when the documents are a biased defense of a private interest. The shell dredging interest is making enormous profits from illegal, privately negotiated contracts, which return a below-market royalty to the state. Therefore, the costs and damages of extraction are borne by the public without compensation. The value of the permits calculated upon figures provided by the shell dredgers' economist Mr. Barnett is \$29,250,000.00. That is wealth that should be more fairly shared with the citizens of this state. It is also unfair to burden working men and entrepreneurs in other businesses, who pay fair royalties and do not damage the environment, with a competing shell industry, which is sponsored by the state through illegal and inadequate royalty requirements and which causes significant damage to the environment and our fisheries industry. You need to pay more attention to concepts of free enterprise and the nature of competition.

Sincerely,


MICHAEL OSBORNE

JUN 22 1987

Lafayette Sportsman's Association • P.O. Box 53715 • Lafayette, LA 70505

June 15, 1987

Colonel Lloyd K. Brown
District Engineer
U.S. Army Corps of Engineers
Post Office Box 60267
New Orleans, Louisiana 70160

Re: Shell Dredging EIS
for Atchafalaya Bay

Dear Colonel Brown:

C. 4.1

The Lafayette Sportsman's Association (LSA) is composed of over 100 members dedicated to assuring the wise use of our natural resources. Sportsmen, conservationists, and environmentally concerned groups and individuals have battled long and hard to provide an opportunity for the impacts of shell dredging to be considered and presented to the public in the form of an environmental impact statement (EIS). Through all the controversy and litigation surrounding the shell-dredging issue in Louisiana, the public has demonstrated a desire to have the pros and cons of depleting a public resource aired, especially when that depletion is done at the expense of other natural resources and when less damaging alternatives and alternative materials are available. The public already has little confidence in the management and regulation of the shell dredging industry in Louisiana; the EIS does little to build public confidence. After reviewing this draft EIS, we are disappointed to conclude it to be inadequate and heavily biased in favor of shell dredging. It reflects little on the concerns of those groups who worked so hard to have it prepared. It evaluates meaningless alternatives and does not appear to give alternate sources of material equal consideration.

C. 4.2

The Summary of Environmental Impacts Section (page S-2) well illustrates our claim that the draft EIS is inadequate. Throughout the EIS (including the summary of Judicial Requirements) the known shell reserves are implied to be the total reserves and are used to assess future industry conditions and economic impacts and to screen and compare alternatives. We do not believe this correlation to be accurate and without knowing total reserves, development and assessment of meaningful alternatives is impossible. A better grasp of the total reserves must be obtained before the EIS is finalized.

C. 4.3

In the Summary of Biological Impacts (page S-4), the discussion incompletely portrays the impacts by not stating that deeper dredged cuts can have dissolved oxygen levels too low for fish survival during warmer periods of the year and that none of the "protected" exposed reefs have been identified nor are any attempts to do so planned.

An affiliate of the Louisiana Wildlife Federation

C.4.4

In the Summary of Recreational Impacts (page S-6), the EIS concludes shell dredging impacts are minimal as relatively little recreational use occurs in the project area. No consideration is given to the numerous fishing rodeos that are held in the area. The conclusion was probably reached in the absence of published recreational use studies specific to the area and without consultation of the public or local people knowledgeable about the situation.

C.4.5

The Summary of Economic Impacts (page S-6) fails to consider the value of the commercial shrimping, crabbing, and finfishing industry in the area, the number of jobs associated with that industry, and the potential impacts of shell dredging on that industry except to make the statement that trawls could be lost if drug across dredged holes.

C.4.6

In the Summary of Social Impacts (p. S-7), the EIS concludes that the shell dredging industry is important to community cohesion. The EIS overlooks and makes no mention of the fact that segments of the public have long been concerned with shell dredging for numerous reasons, including impacts to commercial and sport fishing and coastal erosion, factors which also affect community cohesion and existence.

C.4.7

The Summary of Mitigation Measures (page S-8) incorrectly states that a reef was built at the direction of the State. As the first state permits were issued in 1982 and the reef was built in 1978, we contend that, in fact, no mitigation has been performed under the State permits.

C.4.8

In the Summary of Judicial Requirements, reference is made to several concerns that the United States District Judge ordered the Corps of Engineers to analyze with respect to possibly being impacted by shell dredging. Shell reefs was one concern listed. After stating in Section 3.5.2.3. that no detailed maps of the oyster reefs exist, the EIS concluded that reefs are adequately protected for the dredging alternatives because a buffer zone around the reefs is in effect. To make such a conclusion after stating that the reef locations are not known is irresponsible, especially considering that the Louisiana Department of Wildlife and Fisheries shell dredging leases contain no provisions to protect subaqueous reefs and Louisiana Department of Natural Resources permits require only that such reefs be avoided to the maximum extent practicable (page B-6). With such inadequate information and loose regulations, we find it impossible to conclude that exposed reefs are adequately protected.

C.4.9

Regarding another concern listed and addressed in Section 3.7.6.2. (page EIS-84), it is concluded that shell dredging has little or no effect on recreational fishing, shrimping, and crabbing; however the EIS contains no documentation regarding important traditional recreational use areas (areas sought after by fishermen) or types of bay bottoms preferred by shrimpers. In the project area, fisherman generally seek out reefs. Again concerning fishing, the EIS, on page EIS-44, states that "There is no indication that the fishery resources of the project area have been or will be damaged or adversely affected in any way by the operations of the shell dredges." Yet, since 1914 the systematic dredging of the "massive protective reef of oyster shell", the 30 mile-long Point Au Fer barrier reef, has been leased

C.4.9

and/or permitted for shell dredging. Only after most of the reef was destroyed, was it protected, and then not for environmental reasons but for economic ones (i.e., protection of the State's 3-mile limit for oil and gas severance revenues). Reefs such as this provide the best fishing in the project area.

C.4.10

The EIS does not consider future generations of recreational fishermen who will not have a place to fish or will be crowded on the few remaining reefs in the project area, should they be located and adequately protected in time. Furthermore, the EIS does not adequately consider the number of fishermen from the Lafayette/New Iberia area who fish the area. The Corps of Engineers should poll the area fishing clubs, marinas, and shrimping organizations to determine where their uses occur, compare that information with areas available to shell dredging, seriously consider use conflicts, and then make conclusions regarding impacts to sport fishing. We believe that that is the responsible way to consider impacts.

C.4.11

In summarizing the effects of shell dredging on storm waters in the Gulf of Mexico (page S-9) the EIS refers to Section 3.4.1.2. where the conclusion "No Impact" is stated at least 10 times. We had hoped that serious consideration would have been given to the effects of barrier reefs and land building on dampening the effects of storms on low-lying coastal areas. We do not have the professional expertise to assess these impacts; however, our common sense tells us there must be some impact, possibly a very severe one.

C.4.12

The concern "Exhaustion of the Shell Resource" (page S-10) is again discussed in a very misleading and inappropriate manner, i.e., only the proven reserves are emphasized in discussing the life of the industry. Surely substantial shell reserves must remain as the industry has been kept busy for the last 70 years in the project area, the entire area is still leased for dredging, and no effort by the industry has been made to retire any area from dredging. We conclude that evaluating impacts in this manner biases the EIS and is a real injustice to the public who is interested in knowing the facts. If the total reserves are not known, then let the record state that; do not conjure up numbers based on insufficient data for the sake of filling blank spaces in a report. Instead the EIS should acknowledge that a serious information gap exists and meaningful alternatives cannot be developed or considered or conclusions drawn until that information is available.

C.4.13

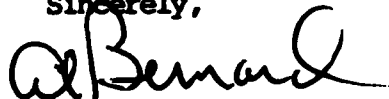
As noted earlier we find that the alternatives considered take the public concerns very lightly. The EIS should consider an innovative management plan for regulating shell dredging in a manner that would be more responsible to the public than the existing one. Presently, the central coast dredging leases and permits encompass more than 600,000 acres and dredges only dredge several hundred acres per year. The Corps of Engineers should consider permitting dredging in only small units at any given time and establishing those units to minimize conflicts to other users, shoreline erosion, and delta development. The EIS should also consider in such a plan, retiring areas from shell dredging in which shell reserves have already been depleted. On page EIS-12, it is stated that agencies regulating the shell dredging industry are not in favor of increasing restricted zones. The EIS

C.4.13 | should explore the rationale for each agency's concern as those agencies should have considered the public's concern.

C.4.14 | In view of the fact that our state is losing thousands of acres of coastal marshes annually, the EIS should give more consideration to protecting the emerging delta in Atchafalaya Bay from impacts resulting from shell dredging. We believe that an alternative detailing specific measures to prevent impacts to delta development should be considered. In the draft EIS, no specific measures are considered other than restrictive zones established 5 years ago.

C.4.15 | In conclusion, we find none of the alternatives which would allow dredging to continue are acceptable to our association for the reasons stated above. Therefore we recommend the EIS be re-drafted and presented to the public again before being finalized. The ISA opposes issuance of any permits to dredge shells until the aforementioned concerns are addressed. We would be willing to reconsider our position if alternatives are proposed that better address the responsible development of our natural resources.

Sincerely,



Al Bernard
President

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Attorney and Counselor at Law
3003 W. Alabama, Suite 205
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(713) 524-0240

Kathryn A. Holliday
Research Assistant

Mary W. Carter
Associate

March 10, 1987

Ms. Elizabeth A. Griffin
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U. S. Army Corps of Engineers
P. O. Box 60267
New Orleans, LA 70160-0267

RE: Separate Section 404 Permits for each
Shell Reef/Shell Dredging E.I.S.

Dear Ms. Griffin:

C.5.1 I am writing regarding the Shell Dredging EIS currently being prepared by the New Orleans District. My clients--Save Our Coast--have several concerns that have arisen in the past nine months since my initial letter to Dennis Chew concerning the scope of the Shell Dredging EIS (letter from Jim Blackburn, dated July 10, 1986). This is the first of several letters addressing specific concerns. The others will be forthcoming over the next two weeks. I am writing at this time in the hope that these work items can be included in the continuing EIS work made possible by the \$135,000 provided to the New Orleans District by the dredging industry.

C.5.2 The concern expressed in this letter is the scope and extent of permits proposed to be issued by the New Orleans District to allow shell dredging in the coastal areas of Louisiana. It is my understanding that these coastal areas are being studied separately from Lakes Pontchartrain and Maurepas. The dredging in the coastal area seeks to remove reef shell from the subsurface portions of the identified coastal bays. It is my understanding that exposed live reefs are not dredged for the shell resource. It is also my understanding that past 404 permits issued by the New Orleans District allowing coastal shell dredging have not been reef, or even bay, specific. Instead, these permits have been "general" within the Louisiana coastal region. Please advise me if my "understandings" are incorrect.

C.5.3 The purpose of this letter is to articulate the proposition that the Section 404 permit should be reef specific, rather than general. Sequentially, (1) the requirements of the 404 program, (2) the detection of reef location, (3) the importance of specificity to 404(b)(1) analyses and (4) the consideration of

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this alternative in the shell dredging EIS will be presented.

I. The Requirements of the Section 404 Program

The Section 404 program requires that a permit be obtained from the Secretary of the Army, acting through the Chief of Engineers, allowing the discharge of dredged material into the navigable waters at "specified disposal sites" 33 U.S.C. 1344. No doubt exists that the reef dredging involves a discharge of dredged material into the navigable waters (see State of Louisiana v. Colonel Robert C. Lee, ___ F.Supp. ___, E.D. La., 1986). No doubt exists that the dredging process is a point source discharge of pollutants. The discharge of a pollutant is defined as "any addition of any pollutant to navigable waters from any point sources" (33 U.S.C. §1362(12)). In order to excavate the shell, waste products are also excavated and redeposited back into Gulf Coast area waters. "The word addition as used in the definition of the term discharge, may reasonably be understood to include redeposit. . . . [T]his reading of the definition is consistent with both the purposes and legislative history of the statute" (Avoyelles Sportsman's League v. Marsh, 715 F.2d 897, 922 [5th Circuit, 1983]).

C.S. 4 No question exists that the dredged spoil disposal occurs from a point source, defined as ". . . any discernible, confined and discrete conveyance including but not limited to any pipe, ditch, channel, tunnel, conduit . . . or vessel or other floating craft from which pollutants are or may be discharged" 33 U.S.C. §1362(14). In the situation of shell dredging, the point source falls clearly within the statutory definition.

The question raised in this correspondence concerns what is a "specified disposal site" as that phrase is used in the Clean Water Act. The Corps regulations are silent on this crucial issue. However, the EPA regulations concerning Section 402 permits are useful at this juncture. Section 402 permits are also required for point source discharges of pollutants, with the only difference between the 402 and 404 permit programs being the severing of the discharge of dredge and fill material from the 402 program to create the 404 program. Otherwise, the programs are similar.

Under the EPA regulations, shell dredging barges would be considered "new dischargers". This definition includes mobile point sources such as a seafood processing rig, seafood processing vessel or aggregate plant, that begins discharging at a site for which it does not have a permit." 40 CFR 122.2 (1986). "Site means the land or water area where any facility or activity is physically located or conducted" . . . 40 CFR §122.2 (1986).

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C.S.4 The shell dredging activity is mobile. The dredge will operate over one reef for a period of time, then will be moved to another site and operate, yet again to be moved. The dredged spoil is being discharged into the water not at one location but at multiple locations. Therefore, a separate 404 permit is required for each reef dredged for shell. This definition is consistent with the treatment of the oil and gas industry under the 402 and 404 programs regarding drilling barges.

This is not to suggest that a "general" permit could not be issued by the New Orleans District. Indeed, the Secretary may issue a general permit for a category of activities that are similar in nature. However, these general permits may be issued only if the activities "will have only minimal cumulative adverse effect on the environment." 33 U.S.C. §1344(e)(1). Cumulative impacts will be the subject of my next correspondence to the New Orleans District.

II. Advance Detection of Reefs

In a meeting with you and several members of the New Orleans District in 1986, I inquired whether the New Orleans District was requiring separate permits for each reef. At that time, I was told by members of the New Orleans District staff that it was not possible to detect these reefs in advance of dredging operations being commenced. As I recall the conversation, the shell dredgers find these shell reefs by probing the sediments with a long hydraulic staff. When the staff encounters resistance, the reef is found and dredging commences. At that time, I inquired about technological means to detect these reefs and was informed that seismic surveying techniques were unsuccessful in discovering submerged reefs.

C.S.5 Since our meeting I have been inquiring about the phenomena of the undetectable reefs and have determined that these reefs can indeed be found by seismic surveys conducted by qualified geologists. Dr. John Anderson and Dr. H. C. Clark of Rice University in Houston both confirmed that individual reefs could be discerned by seismic interpretation. Dr. Anderson is a sedimentologist and Dr. Clark is a geophysicist. Both routinely interpret seismic data and utilize remote sensing in their professional duties. They are "experts" in this subject area.

For your information, I have included as an exhibit to this letter a seismic survey taken from Clear Lake, Texas, an estuarine area in western Galveston Bay. As you can see, reef areas have been clearly identified in this cross-section. Further, a statement from John E. Chance and Associates is

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attached that also indicates the ability to discern the location of these oyster reefs.

C.5.5

It is simply untrue that these reefs cannot be detected by seismic methods in advance of the dredging activity. Irrefutable proof to the contrary exists.

III. EPA 404(b)(1) Guidelines

A major reason for our position that each identifiable reef be the subject of a separate 404 permit arises in the context of the Section 404(b)(1) regulations. Under this section, EPA is given the responsibility to develop "Guidelines for Specification of Disposal Sites for Dredged or Fill Material". These guidelines were promulgated most recently on December 24, 1980, and have been accepted by the Corps as binding in their determination of the suitability of disposal sites. In other words, a proposed 404 permit must be reviewed to determine if it meets the requirements of the 404(b)(1) guidelines. If it does not meet these requirements, the permit must be denied by the Corps.

C.5.6

The 404(b)(1) guidelines require numerous specific issues to be analyzed to determine that a particular disposal site is acceptable. Of particular importance in this regard are 40 CFR 230.10, 230.11 and 230.12. For example, Section 230.11 requires certain factual determinations to be made on each proposed discharge of dredged material. Factual determinations have to be made concerning (a) physical substrate, (b) water circulation, fluctuation and salinity, (c) suspended particulate/turbidity, (d) contaminants and (e) aquatic ecosystem and organisms. In order to comply with these technical requirements, the disposal must be permitted on a reef-by-reef basis.

C.5.7

This interpretation is further buttressed by 40 CFR 230.11(f), titled "Proposed disposal site determinations." This section begins thusly . . . "Each disposal site shall be specified through the use of these guidelines." 230.11(f) then addresses the issue of the "mixing zone" to be used in the application of these guidelines. "The mixing zone shall be confined to the smallest practicable zone within each specified disposal site that is consistent with the type of dispersion determined to be appropriate by the application of these guidelines."

From this section, it is clear that each disposal site shall have a separate mixing zone. This zone is to be depicted in an areal sense. Therefore, this zone must be identified in the specific context of an individual reef, and the individual reef

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C.5.7 must be the subject of a separate 404 permit. To interpret these regulations otherwise would be to require the entire geographic area of coastal South Louisiana to be a "mixing zone". Save Our Coast strenuously objects to this interpretation.

The example cited above is only one of many that could have been chosen to illustrate the importance of the reef-based 404 permit. The scope and coverage of these regulations clearly demonstrate the fine level of analysis required for compliance.

IV. Reef-by-Reef Permit Alternative

C.5.8 At the current time, the New Orleans District is preparing an environmental impact statement (EIS) on shell dredging in Coastal Louisiana. In that EIS, a section on alternatives to the proposed action must be prepared. The proposed action must be defined as issuance of a 404 permit for shell dredging "in coastal Louisiana". By this letter, I am formally requesting the issue of reef-by-reef 404 permits be analyzed in this alternatives section. Save Our Coast believes the Clean Water Act requires such permits. The National Environmental Policy Act certainly requires the New Orleans District to analyze and fully and fairly report their findings on this alternative.

Sincerely,



James B. Blackburn, Jr.

JBBJR/lww
Enclosures

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March 30, 1987

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New Orleans, LA 70160-0267

Certified Mail No. P653076026
Return Receipt Requested

RE: Cumulative Impact Analysis Must Be Addressed
in EIS for Shell Dredging in Central Coastal Area

Dear Ms. Griffin:

As I mentioned in my letter of March 2, 1987, I am writing on behalf of my clients, Save Our Coast, regarding specific concerns about the Shell Dredging EIS being prepared by the New Orleans District. This letter addresses the issue of cumulative impact analysis.

C.6.1

The phrase "cumulative impacts" refers to the fact that multiple actions may impact upon a limited (finite) resource base, thereby generating impacts in excess of those generated by a single action. There is no doubt that cumulative impacts arise in the context of the coastal portion of the Shell Dredging EIS, and cumulative impacts must be addressed in the "Lakes" portion of the Shell Dredging EIS. However, the cumulative impacts arising in the "coastal" EIS and the "Lakes" EIS are likely to be substantially different. Therefore, Save Our Coast concurs in the decision to bifurcate the EIS's. The majority of the comments in this letter are specific to the "coastal" EIS.

In the following paragraphs, several aspects of cumulative impact analysis will be presented. First, the legal basis for cumulative impact analysis will be articulated. Second, the general fact situation associated with coastal dredging will be discussed vis a vis the cumulative impact issue. A summation will conclude this letter.

I. Legal Basis for Cumulative Impact Analysis

C.6.2

The National Environmental Policy Act (NEPA) created the requirement that an environmental impact statement (EIS) be prepared for major federal actions significantly affecting the

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quality of the human environment. In the decision of State of Louisiana v. Lee, 635 F. Supp. 1107 (E.D. La., 1986), the Eastern District of Louisiana ordered the Corps of Engineers (Corps) to prepare an EIS addressing the impact of shell dredging in both the Lakes area and the Gulf Coast area. In the judgment, the District court ordered the Corps to prepare an EIS " . . . which comply(ies) with all NEPA requirements, both procedural and substantive." (La. v. Lee, id., at 1129).

No doubt exists that cumulative impacts must be analyzed in a procedurally correct EIS. Under the case law and regulations implementing NEPA, "environmental full disclosure" has been the critical interpretative phrase. Environmental full disclosure clearly includes the requirement to disclose cumulative impacts. In fact, the major area of controversy has not been about the necessity for disclosing cumulative impact but rather the manner of the cumulative impact disclosure.

The leading case on cumulative impacts is the U.S. Supreme Court's decision in Kleppe v. Sierra Club [427 U.S. 390 (1976)]. Justice Powell wrote for the majority in this opinion. In Section IV of that decision, he stated:

C.6.2 "[C]umulative environmental impacts are, indeed, what require a comprehensive impact statement."

* * * * *

"Thus, when several proposals for coal-related actions that will have cumulative or synergistic environmental impacts upon a region are pending concurrently before an agency, their environmental consequences must be considered together. Only through comprehensive consideration of pending proposals can the agency evaluate different courses of action."

Kleppe v. Sierra Club, 427 U.S. 390, 412 (1976)

After the Kleppe decision, the Council on Environmental Quality (CEQ) (under presidential order) promulgated a comprehensive, binding set of regulations concerning the implementation of NEPA. Since that time, these regulations have been given statutory effect. [Sierra Club v. Sigler, 695 F.2d.957 (5th Cir. 1983); following, Andrus v. Sierra Club, 442 U.S. 347 (1979)]. The key words, phrases and concepts follow:

- A. Cumulative Impacts: " . . . the impact on the environment which results from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertake such other actions.

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Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."

B. Proposal: " . . . exists at that stage in the development of an action when an agency subject to the Act has a goal and is actively preparing to make a decision on one or more alternative means of accomplishing that goal and the effects can be meaningfully evaluated. Preparation of an environmental impact statement on a proposal should be timed (1502.5) so that the final statement may be completed in time for the statement to be included in any recommendation or report on the proposal. A proposal may exist in fact as well as by agency declaration that one exists."

C. Scope: " . . . consists of the range of actions, alternatives and impacts to be considered in an environmental impact statement. The scope of an individual statement may depend on its relationships to other statements (§1502.20 and §1508.20). To determine the scope of environmental impact statements, agencies shall consider three types of actions, three types of alternatives and three types of impacts. They include:

(a) Actions (other than unconnected single actions) which may be:

(1) Connected actions, which means that they are closely related and therefore should be discussed in the same impact statement.

* * *

(2) Cumulative actions when viewed with other proposed actions, have cumulatively significant impacts and should therefore be discussed in the same impact statement.

(3) Similar actions, which when viewed with other reasonably foreseeable or proposed agency actions, have similarities that provide a basis for evaluating their environmental consequences together such as common timing or geography. An agency may wish to analyze these actions in the same impact statement. It should do so when the best way to assess adequately the combined impacts of similar actions or reasonable alternatives to such actions is to treat them in a single statement."

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The case law addressing the necessity for analysis of cumulative impacts are varied in their subject matter but uniform in their holding concerning the need for full disclosure of cumulative impacts. In Thomas v. Peterson (753 F.2d 754 (9th Cir., 1985)), the U.S. Forest Service was ordered to address cumulative impacts arising from two separate proposals in a comprehensive EIS. In Natural Resources Defense Council v. Calloway, 524 F.2d 79 (2nd Cir. 1975), the Navy prepared an EIS on the proposed dredging project to widen and deepen the Thames River Channel and dispose of approximately 2.8×10^6 yds.³ of material at the New London dumping site. Regarding this project, the Second Circuit held:

C 6 2
". . . an agency [may not treat] a project as an isolated, single-shot venture in the face of persuasive evidence that it is but one of several substantially similar operations, each of which will have the same polluting effect in the same area. To ignore the prospective cumulative harm under such circumstances could be to risk ecological disaster."

The Fifth Circuit, with jurisdiction over Louisiana, has also affirmed the requirement to fully disclose and consider cumulative environmental impacts. In the case of Fritiofson v. Alexander, 772 F.2d 1225 (5th Cir., 1985), Justice Randall held that cumulative impacts must be considered in determining whether a major federal action "significantly" affected the quality of the human environment. In this regard, she stated the following:

"The CEO regulations make mandatory a consideration of cumulative impacts at this threshold stage of the NEPA process. The Corps, moreover, cannot avoid NEPA responsibilities by cloaking itself in ignorance." (at 1252)

The Fritiofson case clearly indicates that the Fifth Circuit is sanguine about cumulative impacts and Corps analytical deficiencies.

II. The Factual Setting of the Coastal Louisiana EIS

C 6 3
Initially, the Corps had proposed to conduct two separate EIS's on shell dredging in Louisiana. One EIS would cover the "Lakes" area. The other EIS would cover the "coastal" area. This initial Corps proposal was consistent with Louisiana v. Lee and was a logical approach to two essentially different environmental settings and dredging methods. Save Our Coast concurred in this determination. However, on November 4, 1986, Col. Willis issued a statement reporting that the New Orleans District had decided to bifurcate the Louisiana Coastal study into two separate EIS's.

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C.6.4 This November 4 decision was not open to public comment. It was delivered as a fait accompli. For the record, Save Our Coast objects strenuously to this decision and will continue to express this objection through the public review process. The major reason for our objection is the issue of cumulative impacts. By dividing the Louisiana coastal region into two sections, the Corps is attempting to isolate geographic areas that are physically, hydrologically and ecologically linked.

C.6.5 To analyze only the impacts to the Four League Bay, Atchafalaya Bay and East Cote Blanche Bay area and then to later analyze West Cote Blanche Bay, Vermillion Bay and the coastal strip area is to intentionally obscure cumulative impacts. Further, the rationale for this decision is to prepare the EIS's in a timely manner. The public statement also states that data collection on the other areas will proceed after initial publication of the "eastern coastal" EIS in October, 1987. On its face, this admission indicates that cumulative impacts cannot be addressed and full disclosure will not occur. At this juncture, however, it is worth mentioning again that Justice Randall has previously castigated the Corps' practice of cloaking itself in ignorance. This practice will not succeed in 1987.

C.6.6 Not only is the Coastal EIS now divided into the eastern EIS and the western EIS, but the Corps also is proposing to issue permits that are not reef-specific. This was the subject of my letter of 2 March 1987. Without reef-specific permits, the cumulative impacts within the eastern or western coastal EIS zones are impossible to determine. Therefore, a methodology must be devised by the Corps to address cumulative resource loss within these eastern and western coastal sections, not to mention synergistic issues shared by these regions.

Moreover, there are several other federal actions that are being proposed and evaluated at this time by the Corps of Engineers. These projects include:

- C.6.7
1. The New Iberia port proposal;
 2. Atchafalaya Flood Control Project;
 3. Wax Lake Outlet Closure;
 4. Avoca Island Levee Extension;
 5. Proposals to Save the Louisiana barrier islands and
 6. Oil drilling impacts in the Coastal Louisiana area.

In the Eastern District of Louisiana's judgment, six specific issues were identified which must be addressed vis a vis shell dredging. These were:

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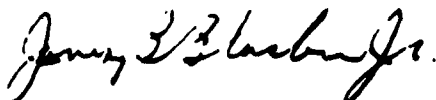
1. The emergence of the Atchafalaya Bay Delta;
2. Water quality;
3. Shell reefs;
4. Sport fishing
5. Stormwaters in the Gulf of Mexico and
6. The exhaustion of the shell resource.

C 6.8 Although many ecological factors are raised by these issues, the fishery resource, water quality and the emergence of the Atchafalaya Bay delta certainly include the issue of loss of "special aquatic sites", as that term is used in EPA's 404 (b)(1) guidelines (40 CFR 1500 et seq). Therefore, at the least, the incremental impact of these various proposed or foreseeable actions upon the issues associated with shell dredging must be fully disclosed prior to any shell-dredging permits being issued by the New Orleans District. Otherwise, the environmental full-disclosure necessary to reasoned decision-making will not exist.

III. Summary

C 6.9 In summary, the EIS(s) being prepared by the Corps addressing coastal shell dredging must fully disclose cumulative impacts. Save Our Coast has an overriding concern that the resources of the Louisiana coast are threatened by unenlightened decision-making. Information is the key to enlightened decision-making. All we are asking in this letter is that accurate information be assembled to identify and predict the cumulative impacts of multiple activities on our valuable Louisiana coast. Common sense suggests that such information be gathered; NEPA and the Courts compel it.

Sincerely,



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June 10, 1987

Colonel Lloyd K. Brown
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Attention: LMNPD-RE

RE: Shell Dredging EIS Comments

Dear Colonel Brown:

On behalf of Save Our Coast, these comments are submitted regarding the two draft environmental impact statements (DEIS) on shell dredging as follows. First, general concerns are stated. Second, legally-oriented issues are presented. Third, specific issues are addressed with those associated with the Lakes DEIS separated from the Coastal EIS.

I. General

C.7.1

In general, both the Lakes DEIS and the Coastal DEIS fail to achieve environmental full disclosure of relevant environmental impact. The most glaring deficiency in both DEIS's concerns the absence of quantitative methodologies and analyses to support conclusionary statements contained in these documents. Additionally, a paucity of data is present in the Coastal DEIS.

From the documents, it is impossible to discern the impacts of the shell dredging activity. For example, in the Lakes DEIS, no doubt exists that Lake Pontchartrain is a very "sick" ecosystem. Shell dredging is part of this disease. However, no good faith attempt has been made to understand the role that shell dredging has played in this "sick ss". Instead, the DEIS seems to characterize the demise of the lake as a "mystery". Tools and techniques exist to solve this mystery. NEPA requires a valid and unbiased scientific analysis be undertaken.

II. Legal-Oriented Issues

The following is a discussion of selected issues that are characterized as "legal-oriented" as compared to the fact-oriented issues in Section III of these comments. These issues directly address the Council on Environmental Quality (CEQ) regulations for EIS's, the Clean Water Act and the decision in Louisiana v.

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Lee, 635 F. Supp. 1107 (E.D. La. 1986). Whether or not the comment applies to one or both EIS's will be noted in each subsection.

A. Reef-by-reef permit alternative.

C.7.2

In the coastal DEIS, the alternative of the Corps issuing permits on a reef-by-reef basis was not evaluated. Technology exists to identify these reef areas. Section 404 of the Clean Water Act requires the specification of disposal areas. The issuance of reef-specific permits is not only feasible, it is mandated by the Clean Water Act. This alternative was brought to the attention of the Corps in a letter dated March 2, 1987 (incorporated in its entirety and attached to these comments). This alternative was ignored by the Corps in the DEIS. This reef-by-reef alternative must--at the least--be evaluated.

B. Section 402 Washwater permits.

C.7.3

Two specific types of wastewater discharge occur as a result of shell dredging. One type is a discharge of spoil material in a classic sense. The second type is a discharge of water from shell-washing activity. These differences in types of discharge were neither identified nor discussed in either the Lakes or the Coastal DEIS. The Louisiana DEQ has taken the position that wastewater discharge permits for this shell washing activity must be obtained. Because the state of Louisiana has not been delegated the NPDES permit program, the U.S.E.P.A. also must issue an NPDES permit for this shell-working activity. This issue has not been addressed in the DEIS's and must be reconciled prior to final agency action because the issue is jurisdictional.

C. Bifurcation of the Coastal DEIS/Cumulative Impacts

C.7.4

Save Our Coast does not take issue with the Corps' decision to prepare separate EIS's for the Lakes area and the Coastal area. Save Our Coast takes strong issue with the decision to divide the coastal area into two separate EIS's. These coastal areas are hydrologically linked. No rational basis exists to support this bifurcation. Because the Corps is proposing a "general" permit for the coastal area, the cumulative impacts of this activity on the entire coastal area must be considered prior to issuance of such permit. Because no analysis has been made of the impacts of the proposed activity on West Cote Blanche and Vermillion Bays, full consideration of cumulative impacts of the coastal permits has not occurred. Further, the court order in Louisiana v. Lee specifically states that the EIS cover the

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C.7.4 | entire coastal area proposed for permitting for shell dredging. Save Our Coast believes that an EIS covering all coastal areas is required to comply with this court order and to fully disclose cumulative coastal impacts.

D. 404(b)(1) Analysis

C.7.5 | Neither the Lakes nor the Coastal DEIS presents a draft 404(b)(1) analysis. Compliance with the 404(b)(1) guidelines is required by the Clean Water Act and the regulations of the Corps. The 404(b)(1) analysis generally is included in the draft EIS. We feel this omission to be a legal deficiency in the DEIS and cannot be cured by simply publishing a 404(b)(1) analysis with the FEIS. Therefore, a draft 404(b)(1) analysis must be circulated for public review and comment prior to incorporation in the FEIS.

C.7.6 | Further, the data to support a 404(b)(1) analysis is missing from both DEIS's. Detailed data concerning special aquatic sites, circulation, dispersion, disposal sites, elutriate tests and other information necessary to comply with 40 CFR sections 230.10 and 230.11 are absent from the DEIS. Under the 404(b)(1) guidelines, the EIS is identified as the source of information to determine compliance with 230.10 and 230.11. In this case, additional data must be developed to determine 404(b)(1) compliance because it is absent from the DEIS.

E. Lake Maurepas and Four League Bay

In the Lakes DEIS, only a cursory discussion of the impact of shell dredging in Lake Maurepas was included. The basis for this cursory discussion was the fact that turbidity problems had led the Louisiana DEQ to restrict dredging in Lake Maurepas. However, the Corps permit appears to include Lake Maurepas as being within the scope of the proposed Corps permit. If the Louisiana DEQ was to alter its position, then shell dredging could occur. Because of the absence of information and analysis on Lake Maurepas, Lake Maurepas should be excluded from the geographic coverage of the lakes permit. As such, this elimination of Maurepas represents an alternative of the Lakes permit.

C.7.7 | Lake Maurepas was identified as a problem area due to turbidity associated with dredge spoil disposal. The basis for the turbidity problems was the shallow nature of Lake Maurepas. Four League Bay is much shallower than Lake Maurepas (average depth ± 2 feet). To the extent that Maurepas is a restricted area, Four

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- C.7.7 League Bay certainly should be restricted. Therefore, the alternative of restricting all dredging activity in Four League Bay should be carefully and fairly evaluated.

F. Endangered Species Act

- C.7.8 The endangered Ridley Sea Turtle exists along the Louisiana coast. At least one endangered manatee has been sighted in the Lakes area. The endangered brown pelican is also present along the Louisiana coast. Save Our Coast urges that the Corps fully and fairly evaluate the impacts of dredging activity on these species. In particular, the recent proposal to require the use of turtle extraction devices (TED's) by the shrimping industry certainly raises the issue of impacts to the sea turtles by dredge spoil disposal. Studies of dredging off the Florida coast clearly indicate dredge spoil disposal to impact the sea turtles. According to the DEIS, relatively few sea turtles exist in coastal Louisiana. However, TED's are being required in coastal Louisiana because of the presence of sea turtles. The turtles are either present or absent. This discrepancy must be resolved.

- C.7.9 Concerns about the brown pelican are associated with the resuspension of toxic pollutants from dredge spoil disposal. Pesticides have been linked to the demise of this magnificent fishing bird (which is the state bird of Louisiana). Due to sedimentation in the Atchafalaya Basin, the potential exists that pesticides are present in the subsurface. If these pesticides are resuspended, they can enter the marine ecosystem and be concentrated up the marine food chain to the pelican. This issue also must be analyzed.

III. Detailed Comments on Coastal DEIS

The EIS on oyster shell dredging in the Atchafalaya Bay area fails to fully disclose the environmental effects of shell dredging in this area. Specific inadequacies of the DEIS to fully disclose environmental impacts are given below.

A. Land Loss from Coastal Erosion

- C.7.10 Dredged areas close to shore can cause refraction of waves, resulting in a concentration of wave energy on a particular area of shoreline, and thereby accelerating coastal erosion. Coastal erosion is occurring throughout much of the project area (see Figure C-9).

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C.7.11 The DEIS does not assess the significance of effects on coastal erosion by this refraction effect of dredge troughs. However, the DEIS concludes that the "overall impacts of such a hole on average wave heights and storm surge heights, including hurricanes, would be negligible" (p. 24). No analysis supporting this conclusion is presented. An analysis supporting this assertion must be provided.

C.7.12 The EIS also states that if "sufficient number of holes is dredged in Four League Bay, to lower the average bottom depth, the tidal prism within the bay will increase (p. 24)." However, the significance of the effects of the increase in tidal energy are not analyzed. This effect must be assessed, particularly with regard to effects on the marshes which border Four League Bay.

C.7.13 The DEIS contradicts itself with regard to the shoreline effects of reducing the shoreline restriction in Upper Four League Bay from 2,500 to 1,500 feet. At one point the DEIS states that "dredge holes . . . should not directly cause coastal erosion when dredged 1500 feet from the shoreline" (p. 25). Any possible indirect effects are not discussed. Later on, however, the DEIS acknowledges that "a reduction in restrictions may effect shoreline changes since the potential for destabilizing the shoreline by the temporary creation of holes/troughs may be created" (p. 29). This discrepancy must be resolved.

C.7.14 Finally, the Corps bases their analysis of the impacts of dredge troughs on coastal erosion on the assumption that the dredge holes are 3-4 feet deep. However, examination of the cross sections of dredge troughs in Appendix C shows that this assumption is not valid. For example, Figures C-11 and C-13 show one dredge cut still 6-8 feet below the natural bottom four years after dredging took place and another that was as much as fifteen feet deep. The assumed 3-4 foot depth must be changed to assess that which will occur.

B. Delta Development

C.7.15 Shell dredging is allowed in the prodelta and portions of the subaqueous delta. The holes left by the shell dredges act as sediment traps, diverting sediment that otherwise would have contributed to the developing prodelta. The DEIS states that "the observance of the present -2 foot NGVD contour restriction . . . should minimize the loss of delta." Documentation in support of this statement is absent. The rationale for the -2 NGVD contour restriction and an explanation of how it adequately minimizes impacts to the delta should be presented in the DEIS.

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C 7.16 In an affidavit of May 2, 1984, geologist Rodney Adam, Assistant Director of the Center for Wetland Resources at LSU noted that he felt the -2 NGVD restriction was inadequate to protect the delta because the restriction still allows dredging to occur in areas which will become land by the end of the century (Louisiana v. Lee, p. 34).

C 7.17 A complete analysis of shell dredging's effect on both coastal erosion and delta development is especially important since land areas (or potential land areas) affected are likely to be valuable wetlands, either marshes or mudflats, subject to 404(b)(1) protection.

C. Wildlife Areas

The Atchafalaya Delta Wildlife Management Area essentially covers all of Atchafalaya Bay. The Marsh Island Wildlife Refuge contains 82,000 acres of generally low-lying marsh on an island on the eastern boundary of East Cote Blanche Bay. The DEIS states that "growth of shell dredging permits

C 7.18 "will mean no impacts to the Marsh Island Wildlife Refuge, since coastal erosion has been shown not to be a problem. Likewise, this alternative would have no impacts on the developing delta." (p. 30).

As evident in the above discussion of land loss, coastal erosion has not been shown not to be a problem. Both Marsh Island and the marshes bordering Atchafalaya Bay are experiencing coastal erosion (see Figure 1-9) and the discussion of the effects of dredging efforts on the erosion process has not been analyzed sufficiently to support a statement of no impact. Furthermore, as indicated above, shell dredging is in fact impacting the developing delta.

D. Water Quality

C 7.19 The impacts to water quality are based on data on sediment quality and elutriate tests of sediment samples taken from Atchafalaya Bay in 1976. The elutriate test (a conservative estimate of contaminant release) showed increases above ambient water quality levels for total Kjeldahl Nitrogen, Chemical Oxygen Demand, Lead, Arsenic, and Cyanide. Parameters in Atchafalaya Bay which exceed EPA freshwater and/or saltwater ambient water quality criteria include arsenic, lead, cyanide and mercury. This information is presented in Appendix C to the DEIS. Existing exceedances of EPA water quality criteria and increases in concentrations of some pollutants resulting from

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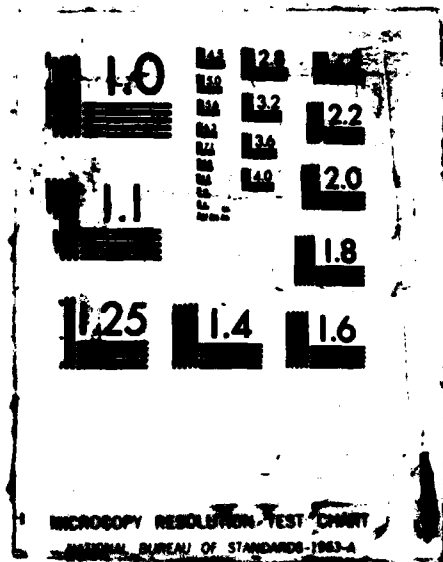
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C.7.19

shell dredging (as indicated by the elutriate test) should be presented in the main body of the DEIS. Furthermore, this section of the DEIS should note dredging's negative impact on dissolved oxygen levels, both during dredging and within old dredge cuts after dredging. In addition, detection limits for measuring each parameter and EPA criteria need to be included in the DEIS so that it can be determined whether or not sufficiently sensitive methods were used in the analysis.

C.7.20

Further, it should be acknowledged that the data on which the assessment of water quality impacts is based are from only one section of the project area, i.e., Atchafalaya Bay. No data is presented on water or sediment quality in East Cote Blanche Bay or Four-League Bay. Additionally, no testing was done for organic pollutants, with the exception of some organochlorides. Lake Ponchartrain sediment quality data shows significant organic pollution.

The EIS states that

"sediment data dealing with the toxicity and bioconcentration of contaminants indicate that the open water disposal of sediments would not effect the quality of the water beyond the resuspension of sediments." (p. 35)

C.7.21

This statement is totally unsupported and untrue. As noted earlier, elutriate tests indicate dredging will increase the concentration of several pollutants. Moreover, no discussion of toxic effects beyond noting exceedances of EPA ambient water quality criterion is presented in the DEIS. The DEIS contains absolutely no discussion of the bioconcentration of contaminants present in the sediment tested.

E. Turbidity and Impacts on Bottom Conditions

C.7.12

The discussion of turbidity impacts and impacts on bottom conditions is flawed in several aspects. The main body of the DEIS fails to compare the range of background turbidity levels to those generated within the dredge plume. Moreover, the DEIS fails to discuss local conditions in the bays which would effect the severity of turbidity plume impacts. For example, the salinity regime of the study area is not brought to bear on the evaluation of turbidity impacts. Studies show that salinity levels less than 1.0 ppt greatly reduce the settling rates of dredge spoil. In a discussion of the fishery resources of the area, it is noted that salinities in major portions of Atchafalaya Bay fall below 1.0 ppt for extended periods (D-9). No estimate is made of the thickness or extent of the fluid mud

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C.7.21 layer resulting from dredging. In its discussion of bottom impacts, the DEIS indicates that 500-600 acres of water bottoms annually are converted to dredge cuts or access channels (p. 39). However, the permits with existing conditions would allow for a maximum of 1138-1750 acres to be disturbed (p. S-4). Three to eight feet of overburden are removed per dredge-cut. Fluid mud from shell dredging in Mobile Bay, Alabama produced fluid mud layers up to 1,000 feet from the discharge, even though considerably less overburden was present in that area (p. C-27). A true picture of these effects must be presented.

C.7.23 The DEIS states that shell dredging "probably has no contribution to long-term turbidity increase." (p. 36) No evidence is given to support this statement. In fact, given that "a thin upper layer of [dredged] sediments will remain subject to occasional resuspension" (p. 36) and the extreme shallowness of the bays (average depths range from 3-6 feet), it seems likely that shell dredging will in fact contribute to long-term increases in turbidity. This question must be assessed in accordance with a methodology that will quantitatively analyze this issue. The existing turbidity analysis is neither complete nor correct.

F. Cumulative Impacts

C.7.24 The DEIS fails to adequately document cumulative impacts to the project area. Various activities have the same impacts to the area as shell dredging. For example, shell dredging can impact wetlands by causing coastal erosion. Canals, and dredging and filling in wetland areas also lead to the loss of wetland habitats. Nowhere in the DEIS are wetlands in the area mapped and quantified. This deficiency must be remedied. Similarly, past and likely future losses of wetlands are not quantified. Shell dredging has significant impacts on the open water bottom habitat. To disclose the full environmental impact to this component of the ecosystem, the direct disruption 1,138 acres of water bottom caused by shell dredging, plus that area impacted by fluid mud, should be added to losses of water bottom caused by canals and dredge disposal for the construction and maintenance of Atchafalaya River and Bayous Chene, Bouf, and Black and Atchafalaya Basin Floodway System Projects.

C.7.25 Additionally, shell dredging's incremental impact on delta development must be added to that caused by the Avoca Island Levee Extension Alternative, which under one alternative design would result in the direct loss of the eastern half of the developing delta.

C.7.26

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G. Lack of Basic Background Environmental Information

C.7.27

The DEIS fails to present much information that is essential to understanding and evaluating the contents of the DEIS. Information which is not included in the DEIS includes, mapped locations of cities, wetlands, wildlife refuges, grass beds, and subaqueous shell reefs. In addition, information on the bays' salinity regime and circulation patterns are not included in the DEIS. The absence of this information makes review of the document's contents extremely difficult.

IV. Specific Comments on the Lakes DEIS

A. Water Quality Impacts

1. Turbidity

Dredging's most obvious water quality impact is the turbidity it generates. Dredging causes an immediate short-term turbidity impact as the discharged bottom sediments from the dredge spread out in a plume and gradually settle to the bottom. In addition, dredging also has a long-term impact on turbidity in that the less consolidated sediments left behind by dredging are more susceptible to resuspension. This effect is significant as the entire lake bottom is subject to intermittent disturbance by wind wave turbulence.

The DEIS consistently underrates shell dredging's effect on turbidity levels. With regard to short-term effects, nowhere in the main body of the DEIS is the typical background turbidity levels of the lakes given and compared to the range of turbidities which are typically generated within a dredge's turbidity plume. Without this information, it is impossible for the reader to evaluate such statements as "turbidity levels near the dredge . . . typically become reduced to . . . 500 to 1,000 NTU within a distance of about 500 feet from the dredge." (EIS-41). Background turbidity levels cited in Appendix C range from 6 to 35 NTU's. Similarly, the DEIS implies that although under freshwater conditions, dredge-generated turbidity is more serious, its relative influence on overall turbidity is not increased because background turbidity in the lake is naturally higher during these periods. The quantitative magnitude of this natural increase is never given, though in fact it is insignificant compared to the orders-of-magnitude increases in turbidity which result from dredging. These omissions must be addressed and erroneous implications corrected.

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During high-runoff periods in late winter and spring salinity in the northwestern area of the lake is likely to fall below 1.0 ppt. Under such near-fresh conditions, turbidity problems associated with dredging are greatly exacerbated. In fact, the freshwater conditions in Lake Maurepas is one of the reasons given for the severe turbidity levels caused by dredging in that lake. As the northwestern area of the lake is one of the more heavily dredged areas of the lake, the frequency and duration of low salinity (> 1 ppt) conditions should be reported using the data from the US EPA STORET SYSTEM listed in Appendix C.

The DEIS further underestimates the short-term turbidity impacts by failing to mention that turbidity levels caused by dredging are many times greater and far more persistent near the lake bottom than near the surface. The discussion on page EIS 43 completely ignores this fact.

It has been estimated that there has been a 50 percent increase in turbidity in the lake since the 1950's (Appendix D, p. 5). With regard to shell dredging's contribution to the long-term increase in turbidity, the DEIS states the following:

"The extent to which shell dredging has contributed to the apparent long-term increase in lakewide turbidity levels is unknown . . . The fact that turbidity levels prior to the advent of shell dredging are unknown, combined with the influences of a variety of other factors that affect turbidity, make it impossible to quantify the impacts of shell dredging on long-term turbidity increases."

In fact, however, information is available which could be used to evaluate the relative importance of the various factors which are believed to have contributed to increasing turbidity levels. The DEIS states that "shell dredging and shrimp trawling have each been partially responsible for the overall long-term turbidity increase with shell dredging having somewhat more of a total impact than trawling." Several factors which indicate shrimp trawling is likely to have far less of an impact on turbidity relative to dredging are omitted from the discussion. These factors include the seasonal nature of shrimping, the much smaller amount of sediment disturbed by shrimp trawling compared to shell dredging and the fact that shrimping generates its turbidity near the bottom rather than at the surface as is the case with shell dredging. Thus, shrimping does not affect upper water column turbidity nor generate large turbidity plumes to the degree shell dredging does. A rough estimate of the relative contribution of shrimp trawling and shell dredging should be obtained by multiplying the number of boat-days used in each

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activity by the average amount of sediment disturbed per boat day. Just such a comparative study done in Corpus Christi Bay, Texas was cited in Appendix C and should be done here.

Data on shrimping and shell dredging intensity in Lake Ponchartrain should have been used to make a direct comparison of the turbidity impacts of the two activities in the lakes area.

Another factor reported to have contributed to the long-term increase in turbidity levels in Lake Ponchartrain is an increase in sediment inputs from the rivers and Bonnet Carre Spillway which bring freshwater into the lakes. No attempt is made however, to evaluate the relative importance of this factor to the long-term increase in turbidity levels of Lake Ponchartrain. This increased sediment loading should be quantified and its relative contribution to turbidity levels in the lakes' area determined. This should be possible using water quality data from the various rivers and Lakes Ponchartrain and Maurepas.

2. General Water Quality and Contaminants

Increased levels of various nutrients and pollutants are often found in the vicinity of dredges. Dredging discharges also lower the level of dissolved oxygen in the immediate area of the dredge. The DEIS fails to fully discuss these impacts to water quality. The DEIS references a Louisiana Department of Environmental Quality "Hydraulic Clam Shell Dredging Investigation." Unfortunately, the study's design and results are not given anywhere in the DEIS. Absent this data, the effects of shell dredging on water quality cannot be evaluated. This deficiency should be corrected.

Shell dredging in Lake Ponchartrain also has significant potential to release contaminants associated with bottom sediments. Organic chemical analysis show fifty-eight identifiable organic pollutants, as well as numerous heavy metals present in Lake Ponchartrain sediments. No data on Lake Maurepas sediment quality was presented. Many of the compounds found were US-EPA Priority Pollutants.

In the case of a few compounds, the pattern of distribution and concentrations were discussed. For other major classes of contaminants, however, no summary and analysis of the data is given, leaving the reader to rely on a confusing mass of raw data. For example, no discussion of the concentration levels and pattern of distribution of polycyclic aromatic hydrocarbons, is presented, despite the fact that these compounds are identified as the organic contaminants found most frequently and present at

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the highest concentrations in Lake Ponchartrain sediments. The toxic/carcinogenic properties of these compounds to fish and invertebrates are not mentioned in the DEIS. Moreover, the DEIS implies that the potential for bioaccumulation of the pollutants present in Lake Ponchartrain is low except for a small number of compounds. Pertinent data from a study of Lake Ponchartrain oysters (McFall J.S., S. Antoine, and I. DeLeon. 1985 Base-neutral extractable organic pollutants in biota and sediments from Lake Ponchartrain. Chemosphere 14: 1561-1569) which showed that oysters in Lake Ponchartrain contained 14 base-neutral priority pollutants and concentrated several of the compounds to levels several times above those found in the sediment is not included in the DEIS. This section of the EIS must be redone to insure full disclosure and unbiased analysis.

Finally, the DEIS states that "the biological availability of contaminants should be the same regardless of whether or not these sediments have been dredged . . ." (p. 35). This statement ignores the fact that dredging suspends contaminated sediments in the water column, where contaminants can be released into the water column. Contaminated particles can also be ingested or absorbed onto the gills by a much greater number of organisms than those exposed to the sediments as they sit on the bottom. Once ingested, the chemical form of the contaminants, and hence their biological availability, can be changed in the chemical environment of the gut. In addition, it should be noted that dredging also distributes contaminated sediments over a wide area. The DEIS must be modified to reflect this information.

B. Biological Resources

1. Grassbeds

Information presented in the DEIS indicates there has been a dramatic and accelerating decline in the acreage of grassbeds in Lake Ponchartrain since the 1950's, with a 30 percent reduction occurring between 1954 and 1973 and an additional 50 percent decline between 1973 and 1986. The DEIS recognizes many factors that may have contributed to this decline, but does not identify those most likely to have had the greatest effect. The long-term increase in the turbidity of the lake is certainly one of the major contributors to the grassbed's decline. The fact that the grassbeds are now found at shallower depths than they were in the past indicates light is becoming a limiting factor at shallower depths, thus restricting the area of habitat suitable for grassbeds. The decline of the grassbeds is an example of the potent and widespread ecological ramifications of Lake

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Ponchartrain's increasing turbidity. Thus the ecological effects of shell dredging cannot be assessed unless there is some understanding of shell dredging's impact on long-term turbidity increases, which this DEIS fails to ascertain.

The DEIS also reports that turbidity plumes from operating dredges do not extend close enough inshore to affect existing grassbeds. However, because the grassbeds have previously grown at greater depth (further offshore) it is conceivable that turbidity plumes from shell dredging are affecting areas where grassbeds once grew, thereby preventing these areas from supporting vegetation. This possibility should be explored. The relationship of impact on these special aquatic sites must be evaluated pursuant to the 404(b)(1) guidelines.

2. Phytoplankton

No quantitative data on historical trends in phytoplankton species composition and abundance are presented in the DEIS, although several studies dating from the 1950's through the 1980's are cited. Such information needs to be obtained and displayed in order to ascertain whether primary production by phytoplankton is decreasing as a result of increasing average turbidity in Lake Ponchartrain. Because shell dredging is likely to be a major contributor to elevated turbidity which in turn may be decreasing phytoplankton primary production, shell dredging is likely to have long-term effects on ecosystem productivity. These long-term effects must be fully evaluated and disclosed.

3. Benthos

Shell dredging has essentially eliminated the natural climax benthic community in the open lake area. The open lake benthic community has historically been dominated by large Rangia clams. Presently, however, "broad expanses [of Lake Ponchartrain] are disturbed with enough frequency to preclude establishment of widespread communities of large Rangia [clams]". (EIS-59). Large Rangia are the only size class of the clam species which are able to reproduce, and thus their decline has long-term implications for the maintenance of the population which the DEIS essentially ignores.

The DEIS fails to fully disclose shell dredging's impact on the benthic community by making several erroneous assumptions in their analyses. In determining the area of bottom habitat disturbed per day of dredging, only that portion of the bottom directly disturbed by the dredge mouth is considered. However,

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in actuality, a much larger area of the bottom is affected due to a spreading fluid mud layer which would smother Rangia and other benthic organisms. Incorporating information provided on the area of the fluid mud layer into calculations of the area of bottom disturbed increases the Corps figure of area disturbed by a factor of 65. More importantly, these calculations do not take into consideration the fact that, once dredged, an area will take somewhere between eight and twenty-one months to recover to pre-dredging conditions. Because dredging intervals in some areas of the lake may be shorter than the interval required for recovery, a great deal of benthic habitat in the lake may be kept at a constant depressed level of production due to shell dredging. Because shell dredgers are required to carry locational recorders, information on how frequently various areas of the lake are dredged can be gathered and compared with the time interval required for recovery. This benthic analysis must be altered to fully disclose this information.

The DEIS also fails to report fully on the results of a study conducted by Sikora and Sikora in 1982 which monitored the benthic community before, during, and after experimental shell dredging and compared the dredged area to a control area where no dredging occurred. This information must be presented in order for benthic impacts to be fully disclosed.

The DEIS also makes erroneous assumptions in its assessment of the significance of the benthic impacts of shell dredging. The EIS state "there are no data that the change that have occurred in the benthic community have adversely impacted fish and wildlife resources or overall lakewide productivity." (p. 63) The changes in the benthic community caused by shell dredging have resulted in large decreases in benthic biomass (p. D-29). Since benthic biomass is one component of lakewide productivity, it cannot be denied that shell dredging has caused a decrease in lakewide productivity. Further, the decline of many fish species associated with the open lake benthic habitat is strong evidence that the deterioration of the benthic community is having an impact on fishery resources. Rather than acknowledge the complexity of the many changes induced in the benthic community, the DEIS bases its assessment of the significance of benthic impacts solely on an inventory of organisms which feed directly on large Rangia clams. This ignores other significant changes in the benthic community which have taken place as well as indirect affects of the loss of Rangia (such as the loss of fecal production) as well as those of other changes in the benthic community. Such an approach totally fails at full disclosure and must be modified to accurately reflect current scientific knowledge. A defensible methodology must be selected and used.

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The discussion of benthic impacts under the "Renew Permits" alternative closes with the statement "It is likely that the benthic communities that exist in the lake today would change little as a result of shell dredging if dredging continues under present conditions." (p. 64) No evidence is given in support of this statement. In fact, the evidence available indicates the decline of the benthic community has been progressive and there is no reason to believe this decline will not continue if shell dredging persists.

The DEIS also errs in its analysis of the benthic impacts of the "no action" alternative by failing to make an educated estimate of benthic community recovery based on the many sources of pertinent information available. The DEIS states "... it is not possible to define recovery without knowing pre-dredging conditions." (p. 64) However, extensive data on the condition of the benthic community is available from the early 1950's, before dredging intensities increased dramatically (Darnell, 1979). Data from this study, as well as data from studies of Lake Maurepas (where dredging was discontinued from approximately 1968 to 1983), a 1981 study by Sikora which tracked the recovery of an experimentally dredged site, and a 1981 study of the benthic communities along a transect across the western portion of Lake Ponchartrain which sampled both areas open to shell dredging and restricted areas could be utilized to make an educated prediction of recovery of the benthic community under the "no action" alternative. This complete failure to make an educated estimate of the future condition of the benthic community of the lake under the "no action" alternative violates the mandate presented in Louisiana v. Lee that the DEIS "compare the projected ecological status of the affected areas if the dredging is continued for another five years with their projected condition if the dredging is halted now."

4. Fisheries

Information presented in the DEIS indicates the fishery resources in Lake Ponchartrain have declined. A decline in total species diversity and species richness has occurred, with benthic-oriented species and species which utilize the open-lake habitat in particular declining in frequency and abundance between the 1950's and 1970's (p. D-37). The approach used in analyzing impact of shell dredging on fishery resources ignores many factors which implicate shell dredging in these changes. By concentrating solely on direct food chain effects (in particular the decline of the large Rangia) in explaining the changes in the fish community, shell dredging's full impact on fishery resources

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is masked. This singleminded approach to the analysis of fishery impacts is evident in the summary of the discussion of fishery impacts.

"These species (which have declined] are known to utilize the open-lake habitats and several investigators have indicated that the decline of these species may be due to stresses in the open lake environment. Based on studies of the feeding habits of these . . . fish species, there is no evidence that shell dredging has adversely impacted these fish." (p. 73).

The summary goes on to support its claim that shell dredging has not impacted fish resources by arguing that the species which have declined and depend directly on benthic organisms (spot and hogchoker) do not feed on large Rangia. The fact that shell dredging has played a major role in reducing benthic biomass and diversity and thus is likely to effect benthic-dependent fish is ignored. Impacts to two other species, sand seatrout and southern flounder, which utilize the open-lake habitat are argued to be non-existent because they do not feed primarily on benthic organisms. This analysis ignores the fact that shell dredging can impact fishes in various ways in addition to food chain effects. For example, sand seatrout uses the open lake area as a nursery area, and shell dredging results in siltation of spawning areas and a lowering of dissolved oxygen levels and an increase in suspended solids levels, two factors which juvenile fish are sensitive to due to their higher metabolic rate.

Finally, the DEIS fails to mention in this summary that the most important species to the commercial fishery, the blue crab, does consume large Rangia in significant quantities. The blue crab catch in the lake has been declining, despite increased demand and higher prices.

5. Wetlands

The DEIS states that "wetlands adjacent to Lake Ponchartrain have experienced dramatic losses over the last 30-50 years" (p. 118). However, the DEIS presents no quantitative data on the magnitude of these losses. Furthermore, data on future loss of wetlands which will occur as a result of Corps of Engineers permits, either already permitted or pending, are not presented in the DEIS. Because the definition of cumulative impacts in the CEQ guidelines includes ". . . past, present, and reasonably foreseeable actions. . ." both past and likely future impacts to wetlands must be fully and quantitatively disclosed. Wetlands in the area are not mapped. A full cumulative impact of wetland

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loss and the role of various activities--including shell dredging--in that loss should be prepared to reach full disclosure.

V. Conclusion

C.7.28 In conclusion, substantial deficiencies exist in the Lakes and Coastal DEIS's for shell dredging. The documents currently do not come close to the legal requirement of environmental full disclosure. These deficiencies must be corrected for informed decision-making on this permit application to occur. Save Our Coast would further voice its objection to what we feel to be bias on the part of the Corps of Engineers in the preparation of these DEIS's to date. Comments which we submitted in writing regarding the "scope" of the DEIS have been ignored. Subsequent correspondence concerning separate reef-by-reef permits and cumulative impacts have been ignored. Your failure to consider our comments should be contrasted to the information conveyed by a staff engineer at the New Orleans District to Kathy Holliday of my staff. In response to an inquiry as to the date when the second Coastal DEIS would be ready for release, she was told "(W)hen the Applicant's consultant completes it."

We hope you will amend your ways and comply with federal environmental law and the court decision in Louisiana v. Lee.

Sincerely,



James B. Blackburn, Jr.

JBBJR/lww

TEXAS A&M UNIVERSITY

COLLEGE OF GEOSCIENCES

COLLEGE STATION, TEXAS 77843-3146

Reply to
Department of
OCEANOGRAPHY

July 5, 1987

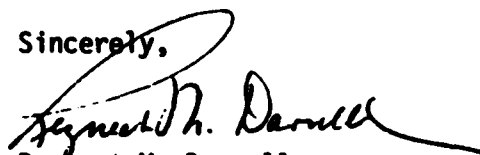
Mr. Cletis R. Wagahoff
Chief, Planning Division
Environmental Analysis Branch
Department of the Army
New Orleans District, Corps of Engineers
P.O. Box 60267
New Orleans, LA 70160 - 0267

Dear Mr. Wagahoff:

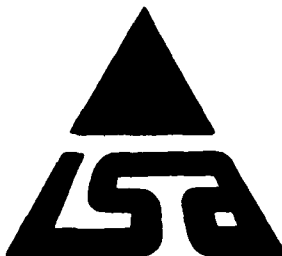
C.8.1
Thank you for sending me copies of the Draft EIS's relative to shell dredging in Lakes Pontchartrain, Maurepas, and Atchafalaya Bay, Louisiana. These documents and other information have been used in preparation of my report to the Office of the Attorney General of the State of Louisiana.

I will not be responding directly to you concerning these documents. However, I do wish to state that I am quite pleased with the quality of the reports. I feel that you have addressed the issues in a fair and professional manner, and I wish to commend you for this.

Sincerely,


Rezheat M. Darnell
Professor of Oceanography

cc: Mr. Ian Lindsey
Dr. Walter Sikora
Mr. Richard Carriere, Jr.



LOUISIANA SYNTHETIC AGGREGATES, INC.

June 16, 1987

Colonel Lloyd K. Brown
U.S. Army Corps of Engineers
P.O. Box 60267
New Orleans, La.

RE: Shell Dredging Environmental Impact Statement

Dear Colonel Brown:

We are manufacturers of a synthetic stone called FLOROLITE. Our stone looks like limestone, yet weighs like clamshell. It is presently being used as a substitute for either by many industrial plants and various governmental agencies. We enclose herewith a list of our customers.

C.9.1

Our company is owned by all Louisiana stockholders and all of our employees, truckers, and subcontractors are Louisiana companies.

We can compete very favorably with the clamshell or limestone. One big savings in addition to price is our better compaction factor and our dusting character. Roads built from our product costs less and perform better.

As our production grows so will our employment ratio.

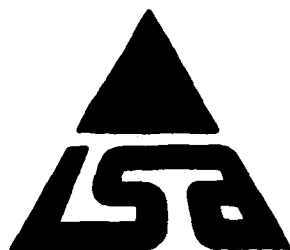
We also enclose herewith a condensed brochure of the material.

Very truly yours,


Harvey J. Cooper, Jr.
Secretary/Treasurer

HJC,jr./dmm

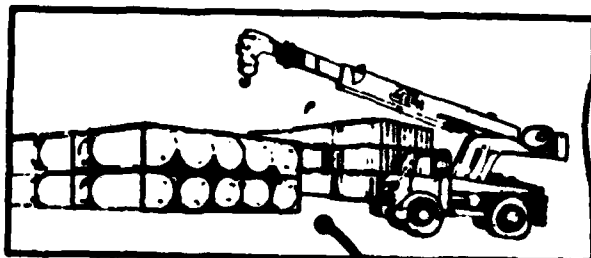
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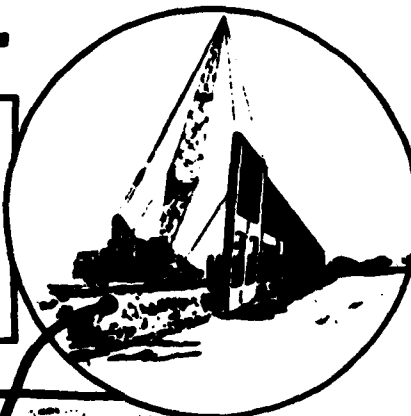
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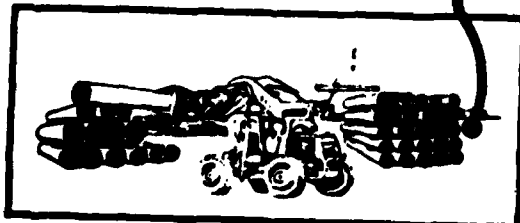
CONCRETE BLOCKS



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BRICK



ROADWAYS / PIPE YARDS / PIPE BEDDING

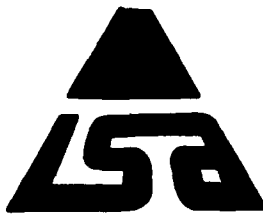


BALLAST & RIP RAP

LOUISIANA SYNTHETIC AGGREGATES, INC.

P.O. BOX 28056 NEW ORLEANS, LA. 70186 (504) 455-3889

U.S. PAT. NO. 4353749



LOUISIANA SYNTHETIC AGGREGATES, INC.

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CONSTRUCTION FIRMS

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ST BERNARD SEWERAGE & WATER BOARD
ASCENSION PARISH
CITY OF GONZALES
ASSUMPTION PARISH

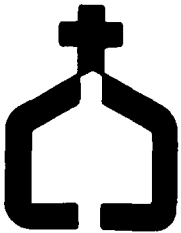
LIVINGSTON POLICE JURY
CITY OF DONALDSONVILLE

OTHER

PACIFIC MOLASSES
CHURCHILL & THIBAUT
INDUSTRIAL LAND FILL
INDUSTRIAL RAILROAD
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Diocese of Houma-Thibodaux

Catholic Social Services

*Post Office Box 883
Houma, Louisiana 70361*



Blone (504) 876-0490

July 9, 1987

U. S. Army Engineer District
P. O. Box 60267
New Orleans, LA 70160-0267

Dear Sirs:

C.10.1 | Enclosed is a statement by the Catholic Bishops of Louisiana concerning coastal erosion and restoration. I would like this to be a part of the E.I.S. you are preparing on oyster dredging in Atchafalaya Bay and adjacent waters.

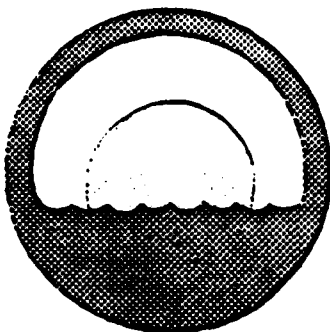
I understand that Louisiana remains the only state to allow such dredging. In light of the imminent loss of our wetlands I am appalled to hear that we are destroying our shell reefs.

Yours truly,


Robert D. Gorman
Assistant Director
Catholic Social Services

RDG/wdb

Enclosure



Save the Lake Action Committee

June 12th 1987

Mr. Dennis L. Chew
U.S. Army Engineer District
P.O. Box 60267
New Orleans, La. 70160-0267

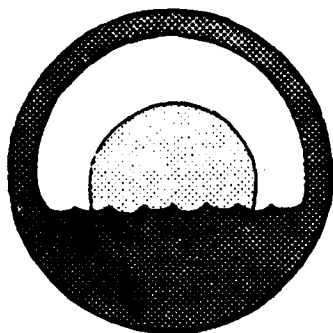
Dear Dennis:

Once again Donna Glee Williams and I extend our thanks to you for being so helpful in providing us with information pertaining to the April, 1987 Draft Environmental Impact Statements on shell dredging in Lake Pontchartrain and Maurepas as well as the draft E.I.S. on oyster shell dredging in the coastal zone.

C.11.1 You may recall that during our conversation I mentioned my concern regarding one of the regulations promulgated in the "Permit Conditions and Restrictions" Corps of Engineers Permit No. (Atchafalaya Bay) 183, Corps of Engineers Permit No. (Four League Bay) 35 and Louisiana Coastal Use Permit CUP821168. These permit conditions and restrictions were included as an attachment to the April 24, 1987 Corps of Engineers Public Notice entitled Time Extensions and Public Hearing For Shell Dredging in East Cote Blanche, Atchafalaya and Four League Bays.

The phraseology of particular concern to me and other members of the Save the Lakes Action Committee is item e) which appears under conditions and restrictions number 10) Restricted Areas, of the Permit Conditions and Restrictions (see attachment to this letter).

Item 10 e) reads as follows: "Within 1,000 feet of exposed subaerial shell reefs; permittee shall avoid subaqueous shell reefs to the maximum extent practical and shall not dredge any subaqueous reefs exceeding 1.0 acres in size. Subaqueous shell reefs shall be defined as those reefs which are above the water bottom but beneath the water level."



Save the Lake Action Committee

Members of the Save the Lakes Action Committee interpret this phraseology as actually allowing the dredging (mining) of subaqueous oyster reefs in sections of coastal Louisiana as long as the specific reefs are equal to or less than 1.0 acres in size. This seems to open the door to the removal of dozens, hundreds or even thousands of acres of subaqueous oyster reefs which are widely accepted as being of great value as substrate providing important habitat for many aquatic species some of which are valuable to sport and commercial fisheries.

C.11.1 We believe our concern is well justified and points out a regulation promulgated by the Corps of Engineers which runs strongly counter to multiuse of our nations coastal resources. It is unlikely that such reefs as I have discussed if removed will return due to changes in salinity that limit development of live oyster reefs in many if not all of the areas to which the permit conditions and regulations apply. These reefs should be considered resources of great longterm value due to the role they play as habitat supporting our nations fisheries and thus carefully protected by all government agencies which have jurisdiction over their exploitation and use.

We ask that you forward our concern to the appropriate persons at the Army Corps of Engineers who have authority in development of and promulgation of the Permit Conditions and Restrictions for these permits. We believe that it is essential that there be no removal and no disturbance of the subaqueous shell reefs along coastal Louisiana by the shell producer industry.

We thank you for your assistance and cooperation in this matter.

Sincerely,

Richard P. Carriere, Jr.

CC Representatives of:

- La. Dept. of Wildlife and Fisheries
- La. Attorney General's Office
- La. Dept. of Environmental Quality
- U.S. Fish and Wildlife Service
- National Marine Fisheries
- Save our Coast
- Delta Chapter, Sierra Club
- Orleans Audubon Society

PERMIT CONDITIONS AND RESTRICTIONS

CORPS OF ENGINEERS PERMIT NO. (ATCHAFALAYA BAY) 183

CORPS OF ENGINEERS PERMIT NO. (FOUR LEAGUE BAY) 35

LOUISIANA COASTAL USE PERMIT CUP821168

- 1) **PROJECT DESCRIPTION.** Dredge to acquire dead shell material for use as construction aggregate, oyster cultch, chicken feed, filter media to remove sulfur dioxide from power plant smoke stack emissions, acid neutralization and petrochemical production.
- 2) **DURATION OF PERMIT.** This permit shall be valid for ten (10) years from its effective date in the present form unless sooner revoked or modified for good cause shown (other than permit violations) after thirty (30) days written notice to permittee and opportunity for permittee to be heard on the alleged basis for revocation or modification.
- 3) **PERMIT LOCATION AND BOUNDARY.** East Cote Blanche, Atchafalaya and Four League Bays, Louisiana Department of wildlife and Fisheries Management Zones 1 through 3.
- 4) **NUMBER OF DREDGES.** Permittee shall not operate more than two (2) dredges at any given time within the area covered by this permit. The number of dredges may be increased after administrative review.
- 5) All requirements imposed by the Louisiana Department of Wildlife and Fisheries in the Shell Dredging Lease are incorporated herein as conditions of this permit.
- 6) The dredge discharge shall be directed over the dredge cut.
- 7) Should changes in the location or the section of the existing waterways, or in the generally prevailing conditions in the vicinity be required in the future, in the public interest, the applicant shall make such changes in the project concerned or in the arrangement thereof as may be necessary to satisfactorily meet the situation and shall bear the cost thereof.
- 8) The applicant shall insure that all sanitary sewage and/or related domestic wastes generated during the subject project activity and at the site, thereafter, as may become necessary shall receive the equivalent of secondary treatment with a disinfection prior to discharge into any of the streams or adjacent waters of the area, or in the case of total containment, shall be disposed of in approved sewerage and sewage treatment facilities, as is required by the State Sanitary Code. Such opinion as may be served by those comments offered herein shall not be construed to suffice as any more formal approval(s) scheduled to be associated with the subject activity. Such shall generally require that appropriate plans and specifications be submitted to DHHR for purposes of review and approval prior to any utilization of such provisions.

- 9) Should any archaeological or historical materials (i.e. pottery, bones, timbers, ship fittings, etc.) be encountered in permittees dredging activities, their locations shall be noted on a map and their locations given to CHS/DNR and the Division of Archaeology.
- 10) RESTRICTED AREAS. No dredging will be conducted:
- a) Within any area which shall dredging is prohibited by LDMF.
 - b) Within one-half mile of existing shoreline in Atchafalaya Bay, Four League Bay and East Cote Blanche Bay except within 1,500 feet of shoreline in upper Four League Bay. (Upper Four League Bay is defined by a line from the mouth of Big Carencro Bayou south to Mosquito Point).
 - c) Within 300 feet of any active oil or gas production or drilling facility. Within 300 feet of an active oil and gas well platform or active production facility platform.
 - d) Over pipelines without specific approval by the pipeline operator/owner.
 - e) Within 1,000 feet of exposed subaerial shell reefs; permittee shall avoid subaqueous shell reefs to the maximum extent practical and shall not dredge any subaqueous reef exceeding 1.0 acres in size. Subaqueous shell reefs shall be defined as those reefs which are above the water bottom but beneath the water level.
 - f) Within Atchafalaya River Delta Restriction: Beginning at Plumb Island Point $X = 2,024,000$, $Y = 282,000$; south to $X = 2,024,000$, $Y = 263,500$; west to $X = 1,987,500$, $Y = 263,500$; north to $X = 1,987,500$, $Y = 307,750$, a point on the north shore of Atchafalaya Bay.
 - g) Within Wax Lake Outlet Restriction: Starting at $X = 1,987,500$, $Y = 300,500$; west to $X = 1,977,700$, $Y = 300,500$, southwest to $X = 1,960,400$, $Y = 294,200$, then northwest to $X = 1,950,000$, $Y = 317,000$.
 - h) Within areas per agreement between the Louisiana Department of Justice (LDJ) and the Louisiana Wildlife and Fisheries Commission (LWFC). These areas are identified in a letter dated December 10, 1976, from LDJ and LWFC. These areas are located along and to either side of a line from South Point on Marsh Island to Point Au Fer Reefs, White Shell Reef, and other areas as indicated in the subject letter.
 - i) Within one mile of the shorelines of Marsh Island in East Cote Blanche Bay.

END
DATE
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JAN
1988